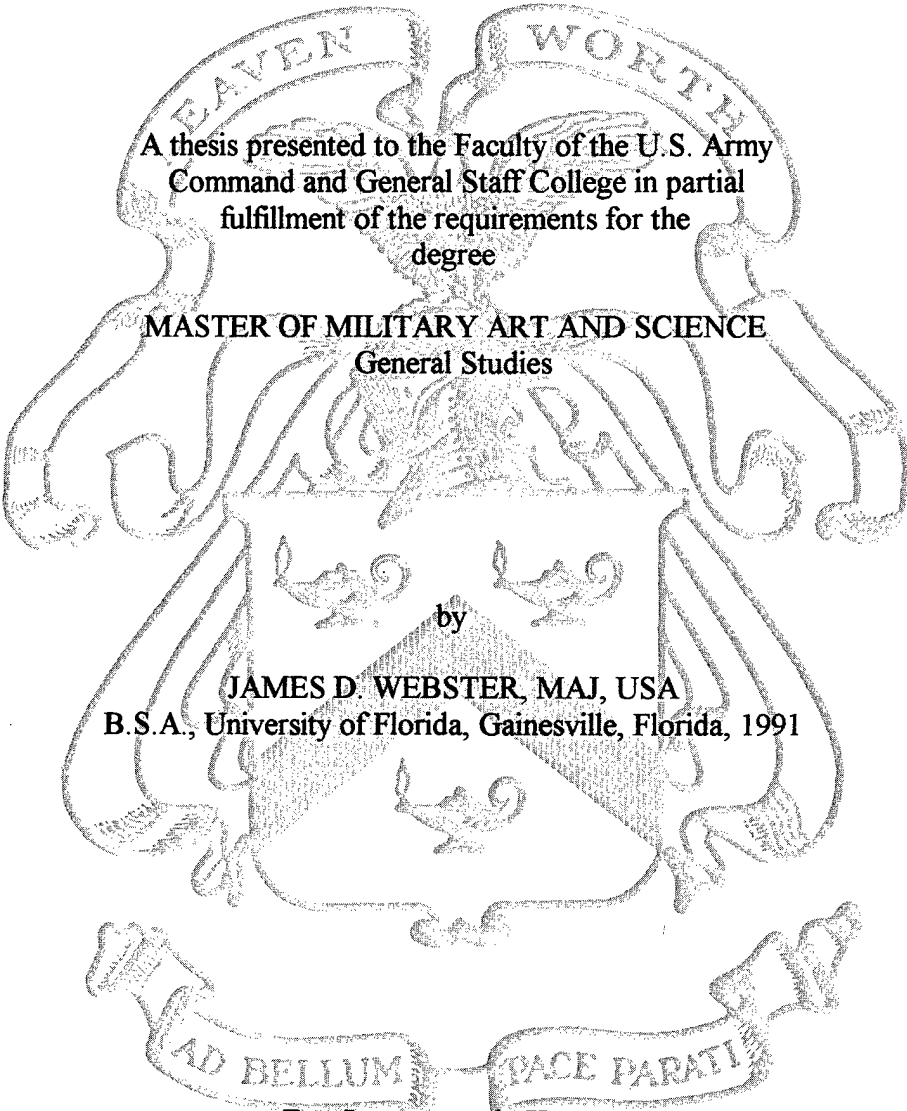


**IMPROVING THE KANSAS STATE EMERGENCY
MANAGEMENT SYSTEM**

The seal of the U.S. Army Command and General Staff College is a large, faint background element. It features a central shield with a sunburst and a banner at the top that reads "EAVEN WORTH". Below the shield is another banner that reads "AD BELLUM PACE PARATI".

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

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B.S.A., University of Florida, Gainesville, Florida, 1991

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Through examination of case studies of past emergency and disaster events occurring in Kansas, Indiana, and North Dakota, recommendations have been derived designed to improve the efficiency of the Kansas Division of Emergency Management. The specific characteristics of emergency management examined within this study are the organization, functions and authority of the three state emergency management agencies. The efficiency of the three emergency management agencies examined in this study are assessed within four aspects of emergency management: preparedness, response, recovery, and mitigation. Emergency management organizations have three different kinds of organizational arrangements: (1) the emergency management director reports directly to the state's governor; (2) the emergency management director reports to the State Adjutant General; and (3) the emergency management director reports to a cabinet level official, such as the public safety director. The Kansas Division of Emergency Management is one of twenty-two states in which the state emergency manager reports directly to the Adjutant General. Indiana and North Dakota were selected for two reasons: (1) both Indiana and North Dakota have experienced significant similar types of natural disasters as has Kansas since 1990; and (2) Indiana's agency is of the type in which the emergency management director reports directly to the governor, providing a different perspective into emergency management. The North Dakota emergency management director reports to the Adjutant General providing insight into a similar emergency management system. The recommendations submitted in this study may increase the efficiency of the Kansas Division of Emergency Management Agency as well as that of other state's emergency management agencies. Recommendations are limited to the scope of this study but may serve to cultivate additional improvements in all facets of emergency management.

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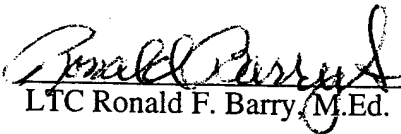
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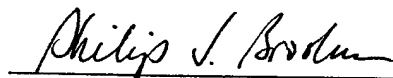
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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

IMPROVING THE KANSAS STATE EMERGENCY MANAGEMENT SYSTEM, by
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Through examination of case studies of past emergency and disaster events occurring in Kansas, Indiana, and North Dakota, recommendations have been derived designed to improve the efficiency of the Kansas Division of Emergency Management. The specific characteristics of emergency management examined within this study are the organization, functions and authority of the three state emergency management agencies. The efficiency of the three emergency management agencies examined in this study are assessed within four aspects of emergency management: preparedness, response, recovery, and mitigation.

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**LIST OF ABBREVIATIONS
AND ACRONYMS**

CDT	Central Daylight Time
DoD	Department of Defense
EAP	Emergency Action Plan
EMA	Emergency Management Agency
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
FRP	Federal Response Plan
HAZMAT	Hazardous Materials
ICS	Incident Command System
IERC	Indiana Emergency Response Commission
JIC	Joint Information Center
KDEM	Kansas Department of Emergency Management
MCC	Mobile Command Center
PSTI	Public Safety Training Institute
SEMA	State Emergency Management Agency
SEOP	State Emergency Operations Plan
TAG	The Adjutant General
USDA	United States Department of Agriculture

CHAPTER 1

INTRODUCTION

The rising cost of natural and man-made disasters has forced federal, state, and local governments to develop emergency management systems that are efficient, cost effective, and responsive at all levels. Nationwide, state level emergency management systems have prepared for and responded to disasters with a greater or lesser degree of efficiency. The Federal Emergency Management Agency's (FEMA) *1997 Strategic Plan* outlines several factors that will provide a greater degree of emergency management at the national level. This strategic plan and the roles, functions, and responsibilities of other organizations that participate in emergency response must be juxtaposed to the internal programs within the state of Kansas to determine shortfalls or successes of the Kansas plan for emergency management. Additionally, emergent advances in emergency management nationwide must also be examined in order to draw logical conclusions about efficiencies that may be incorporated into the Kansas emergency management system. By examining the actions of other states and those of Kansas preceding, during, and following a disaster, it is possible to recommend modifications in organizations, functions, and authorities, perhaps even laws that may improve the performance of the Kansas Division of Emergency Management (KDEM). The primary question of this study is what conclusions drawn from a study of the actions of three state emergency management agencies (SEMAs) responding to emergency or disaster events can increase the efficiency of the KDEM.

The actions of federal and state emergency management agencies in Florida, Alabama, and Louisiana in preparation for Hurricane Georges demonstrate how lessons learned from previous hurricanes were employed to increase responsiveness and reduce the suffering, duration, and costs of relief efforts associated with disaster response. Actions included prepositioning of response personnel and equipment, early evacuation of citizens in the most potentially vulnerable areas, prepositioning of resources to aid in the recovery efforts, and the physical buildup of critical areas designed to reduce the effects of wind and water damage. In this same way, this study may also provide insight into actions the KDEM can take to improve its performance during future emergency disaster events.

The object of this study is to determine recommendations by which the State of Kansas can improve the KDEM's performance. The senior military officer within the Kansas National Guard is the Adjutant General. The Adjutant General is responsible for the implementation of activities associated with emergency management in his role as top military officer and Director of Emergency Management. The Adjutant General of Kansas exercises direct authority over all National Guard assets within Kansas (both Air National Guard and Army National Guard). This direct authority assures that the National Guard is responsive to the needs of the state in the face of emergencies. The two other SEMAs examined in this study, Indiana and North Dakota, are not subordinate organizations within the National Guard. The ability of those SEMAs to employ National Guard assets is but one of the aspects of emergency management examined in this study.

Knowing the role of the Kansas Army National Guard in disaster emergency management, its relationship with FEMA and all associated federal agencies, and its interaction with other Department of Defense (DoD) agencies during a declared disaster is required to determine the mechanics with which Kansas manages resources employed to prepare for, mitigate, respond to, and recover from disaster events. The efficiency of these interactions is the focus of this study. By examining how the KDEM conducts emergency management with regard to state and federally declared disasters and by examining the performance of other states under similar circumstances, it is possible to determine areas where the Kansas system can be improved to increase the efficiency with which it manages these disaster events.

This is not a comparative analysis. There are too many factors distinguishing emergency management systems nationwide and the disaster situations they encounter to make a logical comparison. Some states experience natural disasters that differ greatly from other states. Although these states may structure their emergency management agencies similarly, the nature of recurring natural disasters demands that the functions of the organizations within the agency prepare and react differently. Furthermore, the factors involved with any type of disaster (a tornado for example) vary considerably from state to state and from event to event. The number of people and the types of businesses affected, and the severity of damage vary so greatly from one event to another that a comparative analysis is impossible.

In order to ensure that this thesis provides a thorough examination of efficiency, it is necessary to narrow the focus to certain aspects of emergency management. "The disaster life cycle describes the process through which emergency managers prepare for

emergencies and disasters, respond to them when they occur, help people and institutions recover from them, mitigate their effects, reduce the risk of loss, and prevent disasters...from occurring" (FEMA 1998). This study examines four aspects of the disaster life cycle: preparation, response, recovery, and Mitigation. The analysis of these four aspects is examined in case studies of disasters to reveal how Kansas prepared for, responded to, recovered from, and established mitigating measures in response to disasters. The performance of other states, with regard to these four aspects, is also reviewed to determine efficiencies manifest in the organization, functions, or authority of the SEMA. Several criteria have been established by which performance can be assessed. The analysis and, therefore, the conclusions derived do not provide a comprehensive study of emergency management, but rather reveal methods by which Kansas can more efficiently prepare for, respond to, recover from, and mitigate the effects of disasters.

This thesis examines several case studies of past disasters, focusing on the organizations, functions, and roles of SEMAs of three states with differing SEMA organization. Further, how the SEMA integrated the activities of federal agencies during emergency or disaster events is examined to determine if efficiencies can be derived from this relationship. The organization of the system (whether local, state, or federal) that existed at the time of the disaster is reviewed to determine if those systems met the challenges the disaster posed. Particular attention is paid to improvements of those systems in response to lessons learned. In many instances the lessons learned are imparted on the system, but as of the date of publication of this study, those improvements have not been proven to be more or less efficient in the face of another

disaster. Therefore, one must assume that changes in an emergency management agency as a result of lessons learned were made to increase efficiency and responsiveness, as well as reduce the suffering and the cost and associated with disaster relief.

The purpose of this thesis is not to suggest that the KDEM system for emergency management be totally revamped, but rather only to determine whether the KDEM can operate more efficiently by adopting procedures that are in force in other states. Case studies of disaster events that have occurred in Indiana, North Dakota, and Kansas are reviewed in chapters 4, 5, and 6, respectively. In each chapter the case study is reviewed, followed by an analysis of activities associated with the event and recommendations derived from the analysis. Chapter 7 contains conclusions derived from research conducted, as well as recommendations for further study.

History of Emergency Management

The earthquake that rocked San Francisco on 18 April 1906 rapidly exceeded the capabilities of local assets to manage the effects of the disaster. At 1815 hours 18 April, Brigadier General Frederick Funston, commander of the Presidio, put the city under military control. He ordered all troops to help the city's firemen and police (Garfield 1997). Despite the coordinated effort of the three agencies, the city was ravaged by fires. In the end, over 700 people lost their lives to effects of the quake and the ensuing fires.

The beginning of emergency management was shaky at best. Since the quake of 1906, state and federal agencies have made huge inroads in the development of disaster mitigation and relief programs designed to reduce the effects of man-made and natural disasters. The National Security Act of 1947 also provided for the reorganization of the armed forces for (among other things) peacetime operations to include civil disturbances.

The Disaster Relief Act of 1970 provided legislation which targeted federal funding for disaster relief efforts. The Disaster Relief Act, superseded by the Robert T. Stafford Disaster Relief and Emergency Assistance Act, now commonly called the Stafford Act, provides the principal authority for the president to provide assistance in mitigating against, responding to, and preparing for disasters and emergencies, such as earthquakes, hurricanes, floods, tornadoes, and terrorist acts. The Stafford Act is administered by FEMA, which itself was created in 1979. Modeled after military organizations, FEMA has the authority under the Stafford Act to assign tasks to any federal department or agency in support of a disaster or emergency declared by the president. (Beauchesne 1998, 25) Under the Stafford Act, Congress authorizes federal funding for two types of occurrences: major disasters (defined in this study as a sudden calamitous emergency event bringing great damage, loss, or destruction) and emergencies (defined in this study as a condition of disaster or extreme peril to the safety of persons and property, caused by such conditions as air pollution, fire, flood, etc.). Both require that a governor request federal assistance and the president must determine that the 'severity and magnitude' of the occurrence make effective response beyond the state's capability (California Institute for Federal Policy Research 1997). Other legislative measures were to follow. The Fire Prevention and Control Act of 1974 and the Earthquake Hazard Reduction Act of 1977 are but two of many such laws that aid state governments and the federal government in the management of disasters and other emergencies.

Federal funding became the target of many legislative processes. "In April 1986 the FEMA proposed a rule that would have required a state to meet certain 'economic capability factors' to determine its eligibility for disaster assistance" (California Institute

for Federal Policy Research 1997). A 1988 amendment to the Stafford Act provided that the federal government's share of major disaster and emergency funding is to be "not less than" 75 percent of the damage caused. "The [federal] government's share of emergency assistance can rise to 100 percent for the first ten days of an emergency, up to a limit of \$5 million. A cost-sharing burden was placed on the state, albeit a maximum of 25 percent, [with the agreement that] where the state would take appropriate response action under State Law and direct execution of the State's emergency plan" (California Institute for Federal Policy Research 1997). The result of these measures is a nationwide increase in efficiency of disaster response. Modifications of federal funding, however, continue to occur.

Historically, the supplemental appropriations request has been designated an "emergency" and, therefore, not subject to offsetting budget cuts under the Budget Enforcement Act of 1990. In 1997, however, in considering further supplemental appropriations for the Northridge Earthquake, Congress decided that offsets must be found, regardless of the emergency designation given by the president's request. This precedent, a by-product of the move to balance the budget and eliminate the federal deficit, is expected to be followed in the future and makes it all the more important to consider alternatives to the historical manner in which the federal government has addressed disaster relief (California Institute for Federal Policy Research 1997).

The financial constraints of disaster relief are compounded by lack of standardization among SEMAs, the state-level emergency management entity corresponding to FEMA at the federal level, and failures in the integration of these organizations into federal agencies associated with emergency response and disaster

relief. Both state governments and the federal government have moved to correct these deficiencies. The federal government, with FEMA as its lead agency, has developed a strategic plan that, when implemented, promises to rectify many of the shortfalls that still exist in the emergency management systems nation wide.

Glossary of Terms

This glossary is provided for two reasons: to provide definitions that lend a better understanding to emergency management and to define the parameters for this discussion. While many of the terms associated with emergency management are commonplace, the meaning of those terms within the context of emergency management is not. Most of the terms included here are found in the *FEMA Instruction Pamphlet 5000.2* (FEMA 1986). Other terms are defined to establish parameters within which a qualitative analysis will be conducted. More about specific terminology used in analysis is provided in chapter 3, "Research Methodology."

Action Plan: The plan prepared in the EOC containing the emergency response objectives of that SEMA level reflecting overall priorities and supporting activities for a designated period. The plan is shared with supporting agencies.

Agency: A division of government with specific functions, or a Non-governmental organization (e.g., private contractor, business, etc.) That offers a particular kind of assistance. In an Incident Command System (ICS), agencies are defined as jurisdictional (having statutory responsibility for incident mitigation), or assistance and/or cooperation (providing resources and/or assistance).

Avoidance: To eliminate a hazard through measures, such as relocation or prohibition of construction within an area susceptible to risk or danger or by other means.

Base Flood: A term used in the National Flood Insurance Program to indicate the minimum size flood to be used by a community as a basis for its flood plain management regulations, presently required by regulation to be that flood which has a 1 percent chance of being equaled or exceeded in any given year. Also known as a 100-year flood or 1 percent chance flood.

Base Flood Elevation (BFE): The elevation for which there is 1 percent chance in any given year that flood levels will equal or exceed it. The BFE is determined by statistical analysis for each local area and designated on the Flood Insurance Rate Map. It is also known as the 100 Year Flood.

Casualty Collection Point (CCP): A location within a jurisdiction which is used for assembly, triage (sorting), medical stabilization, and subsequent evacuation of casualties. It may be used for the receipt of incoming medical resources (doctors, nurses, supplies, etc.) Preferably the site should include or be adjacent to an open area suitable for use as a helicopter pad.

Catastrophic Disaster: Although there is no commonly accepted definition of a catastrophic disaster, the term implies an event or incident which produces severe and widespread damages of such magnitude as to result in the requirement for significant resources from outside the affected area to provide the necessary response.

Check-in: The process whereby resources first report to an incident or into an EOC. Check-in locations at the SEMA field level include: Incident Command Post (Resources Unit), Incident Base, Camps, Staging Areas, Helibases, Heliports, and Division Supervisors (for direct line assignments).

Compact: Formal working agreements among agencies to obtain mutual aid.

Continuity of Government (COG): All measures that may be taken to ensure the continuity of essential functions of governments in the event of emergency conditions, including line of succession for key decision makers.

Cost Sharing Agreements: Agreements between agencies or jurisdictions to share designated costs related to incidents. Cost sharing agreements are normally written, but may also be verbal between authorized agency or jurisdictional representatives at the incident.

Damage Assessment: The process utilized to determine the magnitude of damage to and the unmet needs of individuals, businesses, the public, and the community, caused by a disaster or emergency event.

Department Operations Center: An EOC used by a distinct discipline, such as fire, medical, hazardous material, or a branch, such as Department of Public Works, Department of Health, or local water district. It has its own operations center and communicates back to the EOC. Department Operations Centers may be used at all SEMA levels above the field response level depending upon the impacts of the emergency.

Disaster: A sudden calamitous emergency event bringing great damage loss or destruction. (Different from "Emergency" for the purposes of this study).

Disaster Application Center: A facility jointly established by the Federal and State Coordinating Officer within or adjacent to a disaster impacted area to provide disaster victims a "one-stop" service in meeting their emergency needs, including

representatives of local, state, and federal governmental agencies, private service organizations and certain representatives of the private sector.

Disaster Assistance Program: A program that provides State funding or reimbursement for local government response related personnel costs incurred in response to an incident.

Disaster Field Office: A central facility established by the Federal Coordinating Office within or immediately adjacent to a disaster impacted area to be utilized as a point of coordination and control for state and federal governmental efforts to support disaster relief and recovery operations.

Disaster Preparedness Improvement Program (DPIG): Authorized under Section 201 of the Stafford Act. Annual matching awards are provided to the State departments to improve or update their disaster assistance plans and capabilities.

Emergency: A condition of disaster or of extreme peril to the safety of persons and property caused by such conditions as air pollution, fire, flood, hazardous material incidents, storms, terrorism or the results of terrorism, epidemic, riot, drought, sudden and severe energy shortage, plant or animal infestations or disease, the Governor's warning of an earthquake or volcanic prediction, an earthquake or other conditions other than those resulting from a labor controversy.

Emergency Management: (Direction and Control): The provision of overall control and/or coordination of emergency operations at each level of the Statewide Emergency Organizations, whether it be the actual direction of field forces or the coordination of joint efforts of governmental and private agencies in supporting such operations.

Emergency Management Coordinator: The individuals within each jurisdiction that are delegated the day-to-day responsibility for the development and maintenance of all emergency management coordination efforts.

Emergency Operations Center (EOC): A location from which centralized emergency management can be performed. EOC facilities are established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency.

Emergency Operations Plan (EOP): The plan that each jurisdiction has and maintains for responding to appropriate hazards.

Emergency Period: A period which begins with the recognition of an existing, developing, or impending situation that poses a potential threat to a community. It includes warning (where applicable) and the impact phase and continues until immediate and ensuing effects of the disaster no longer constitute a hazard to life or threat to property.

Emergency Public Information (EPI): Information disseminated to the public by official sources during an emergency, using broadcast and print media. EPI includes: (1) instructions on survival and health preservation actions to take (what to do, what not to do, evacuation procedures, etc.), (2) status information on the disaster situation (number of deaths, injuries, property damage, etc.), and (3) other useful information (State/Federal assistance available).

Emergency Response Agency: Any organization responding to an emergency, whether in the field, at the scene of an incident, or at an EOC, in response to an emergency or providing mutual aid support to such an organization.

EOC Action Plan: The plan developed at SEMA EOC levels which contains objectives, actions to be taken, assignments and supporting information for the next operational period.

Federal Coordinating Officer (FCO): The person appointed by the President to coordinate federal assistance following an emergency or major disaster declaration.

Federal Disaster Assistance: Provides in-kind and monetary assistance to disaster victims state, or local government by federal agencies under the provision of the Federal Disaster Relief Act and other statutory authorities of federal agencies.

Federal Disaster Relief Act: Public Law 93-288, as amended, that gives the President broad powers to supplement the efforts and available resources of state and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters.

Federal Emergency Management Agency (FEMA): Created in 1979 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

Federal Insurance Administration (FIA): The government unit, a part of FEMA, that administers the National Flood Insurance Program.

FEMA-State Agreement: A formal legal document between FEMA and the affected state, stating the understandings, commitments, and binding conditions for assistance applicable as the result of the major disaster or emergency declared by the President. It is signed by the FEMA Regional Director or designee and the Governor.

Field Command Post: A field headquarters where the incident is managed outside the EOC. This is similar to the field incident command center.

Flood Hazard Boundary Map (FHBM): The official map of a community that shows the boundaries of the flood plain and special flood hazard areas that have been designated. It is prepared by FEMA, using the best flood data available at the time a community enters the emergency phase of the National Flood Insurance Program (NFIP). It is superseded by the Flood Insurance Rate Map (FIRM) after a more detailed study has been completed.

Flood Insurance Rate Map (FIRM): The official map of a community, prepared by FEMA, which shows the base flood elevation, along with the special hazard areas and the risk premium zones. The study is funded by FEMA and is based on detailed surveys and analysis of the site-specific hydrological characteristics.

Function: In Incident Command System (ICS), function refers to the five major activities in the ICS, i.e., Command Operations, Planning/Intelligence, Logistics and Finance/Administration. The same five functions are found at all SEMA levels. At the EOC, the term "management" replaces "command." The term "function" is also used when describing the activity involved, e.g., "the planning function."

Hazard Mitigation: Any cost effective measure that will reduce the potential for damage to a facility from a disaster event.

Hazard Mitigation Assistance Program: Authorized under Section 404 of the Stafford Act. It provides funding for hazard mitigation projects that are cost effective and complement existing post-disaster mitigation programs and activities by providing funding for beneficial mitigation measures that are not funded through other programs.

Hazard Mitigation Program: The plan resulting from a systemic evaluation of the nature and extent of vulnerability to the effects of natural hazards present in society that includes the actions needed to minimize future vulnerability to hazards.

Incident: An occurrence or event, caused by either human or natural phenomena, that requires action by emergency response personnel to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Commander: The individual responsible for the command of all functions at the field response level.

Incident Command Post (ICP): The location at which the primary command functions are executed. The ICP may be collocated with the incident base or other incident facilities.

Incident Command System (ICS): The nationally used standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a command organizational structure, with responsibility for the management of resources to effectively accomplish stated objectives pertinent to an incident.

Individual Assistance (IA): Supplementary Federal assistance provided under the Stafford Act to individuals and families adversely affected by a major disaster or an emergency. Such assistance may be provided directly by the Federal Government or through State or local governments or disaster relief organizations.

Local Emergency: The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city, caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, earthquake or other conditions, other than those resulting from a labor controversy, which are or are likely to be beyond the control of the services, personnel, equipment and facilities of that political subdivision and which requires the combined forces of political subdivisions to combat.

Major Disaster: Any hurricane, tornado, storm, flood, high-water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mud slide, snowstorm, drought, fire, explosions, or other catastrophe in any part of the United States which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Federal Disaster Relief Act, above and beyond emergency services by the Federal Government, to supplement the efforts and available resource of States, local governments, and disaster relief organizations in alleviating the resultant damage, loss, hardship, or suffering.

Mitigation: Pre-event planning and actions which aim to lessen the effects of the potential disaster.

National Emergency Training Center (NETC): FEMA's campus in Emmitsburg, Maryland, composed of the United States Fire Administration (USFA) and the Emergency Management Institute (EMI).

National Flood Insurance Program (NFIP): The Federal program, created by an act of Congress in 1968, that makes flood insurance available in communities that enact satisfactory flood plain management regulations.

Operational Period: The period of time scheduled for execution of a given set of operation actions as specified in the Incident or EOC Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours.

Proclamation Process: When a disaster strikes, local authorities proclaim a disaster and individuals request help from private relief organizations and their state government, which give all assistance possible. If assistance is beyond their capability, the governor requests a presidential declaration of a major disaster or an emergency.

Public Assistance (PA): Supplementary federal assistance provided under the Stafford Act to State and local governments or certain private, nonprofit organizations other than assistance for the direct benefit of individuals and families.

Regional Director: A director of a regional office of FEMA, or his/her designated representative. As used in the Stafford Act, Regional Director also means the Disaster Recovery Manager who has been appointed to exercise the authority of the Regional Director for a particular emergency or major disaster.

Response: Activities to address the immediate and short-term effects of an emergency or disaster. Response includes immediate actions to save lives, protect property and meet basic human needs. Based on the requirements of the situation, response assistance will be provided to an affected state under the Federal Response Plan, using a partial activation of selected ESS or full activation of all ESS to meet the needs of the situation.

Scene Commander: A representative of the public service agency having the overall responsibility for management of the emergency at the scene. Thus, the nature and location of the emergency will determine the agency having primary jurisdiction.

Stafford Act: Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707, signed into law 23 November 1988; amended the Disaster Relief Act of 1974, PL 93-288.

State Coordinating Officer (SCO): The person appointed by the governor to act for the state in cooperation with the Federal Coordinating Officer.

CHAPTER 2

ORGANIZATIONS, FUNCTIONS, AND AUTHORITIES

Introduction

This chapter establishes a foundation for analysis of the efficiency of state level emergency management through a study of the organization, functions, and authorities of FEMA and three state emergency management agencies. The organization, functions, and authorities of the SEMAs of two other states are also discussed to demonstrate the relationship those states have with FEMA and DoD agencies. "States have different types of emergency management organizational structures. For example, in fifteen states the emergency management director reports directly to the Governor. In twenty-two states, the emergency management director reports to the state adjutant general who then reports to the Governor. In fourteen states, the emergency management director reports to a cabinet-level official, such as the director of public safety" (Beauchesne 1998, 14). Kansas is one of those twenty-two states where the emergency management director reports to the adjutant general. The emergency management directors of Indiana and North Dakota both report directly to the governor. Indiana and North Dakota were chosen for this study for two reasons. First, both states have encountered many of the same types of disaster events as Kansas (e.g., floods, tornadoes, and severe winter storms). Second, the chain of command linking the emergency management director directly to the Governor provides a different perspective to be used for suggesting recommendations.

The final portion of this chapter provides a notional emergency scenario which is used to display the actions of local, state and federal emergency management agencies when disaster strikes. These two portions ensure a base of knowledge has been formed to enable a better understanding of the dynamics of emergency management.

Organization, Functions, and Authority

This section provides the organizational structure, the functions of elements of that organization, and the authorities of the organization with regards to disaster emergency management. Below, those aspects of FEMA, the KDEM, the Indiana State Emergency Management Agency, and the North Dakota Division of Emergency Management are described and depicted to establish a foundation upon which the remainder of the study is built. The method by which a disaster incident is reported and by which resources are allocated to the response is described to ensure understanding of the mechanics associated with state and federal level disaster declaration procedures.

The following information provides the organization, functions, and authorities of FEMA and three state emergency management systems. The information was drawn from material provided to the author by FEMA or the appropriate SEMA. The format of the information reveals a level of specificity each of the agencies provides to the personnel within the agency, as well as any interested party outside of the agency. Therefore, it is possible to derive an initial picture of some level of efficient responsibility and task management of each agency. The author has deliberately structured the information as it was provided by the agency to indicate internal management of responsibilities and authorities.

Federal Emergency Management Agency

Organization

Emergency management is not a new function of government, but the framework of today's emergency management organizations are founded in relatively new laws.

The modern authorization for federal support to civil authorities is based on the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) and the Economy Act. The former enables the federal government to 'provide assistance to U.S. states, territories, and possessions to alleviate suffering and mitigate damage resulting from major disasters and civil emergencies'. The latter empowers federal agencies to provide routine support to each other under certain conditions if reimbursed.

The key agency for emergency assistance to civil authorities is the FEMA. By executive order, the President appointed FEMA as the lead federal agency for disaster and emergency assistance and as proponent for the Federal Response Plan (FRP). Published in 1992, that plan details how 28 federal departments and agencies will supplement state and local government response (Grange and Johnson 1997, 108).

The organization of FEMA has evolved from its military background, staying true to many of the principles of a military organization; but has also been influenced by the "events" associated with a disaster. The FEMA organizational structure is depicted in Figure 1.

FEMA's organizational structure mirrors the functions that take place in the life cycle of emergency management: mitigation, preparedness, and response and recovery. FEMA also has within its organization the U.S. Fire Administration, which supports the nation's fire service, and the Federal Insurance Administration, which provides flood insurance to property owners nationwide. In addition, a Director of Strategic Communications reports to the FEMA Director. FEMA has ten regional offices, and two area offices. Each region serves several states, and regional staff work directly with states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur (FEMA 1998).

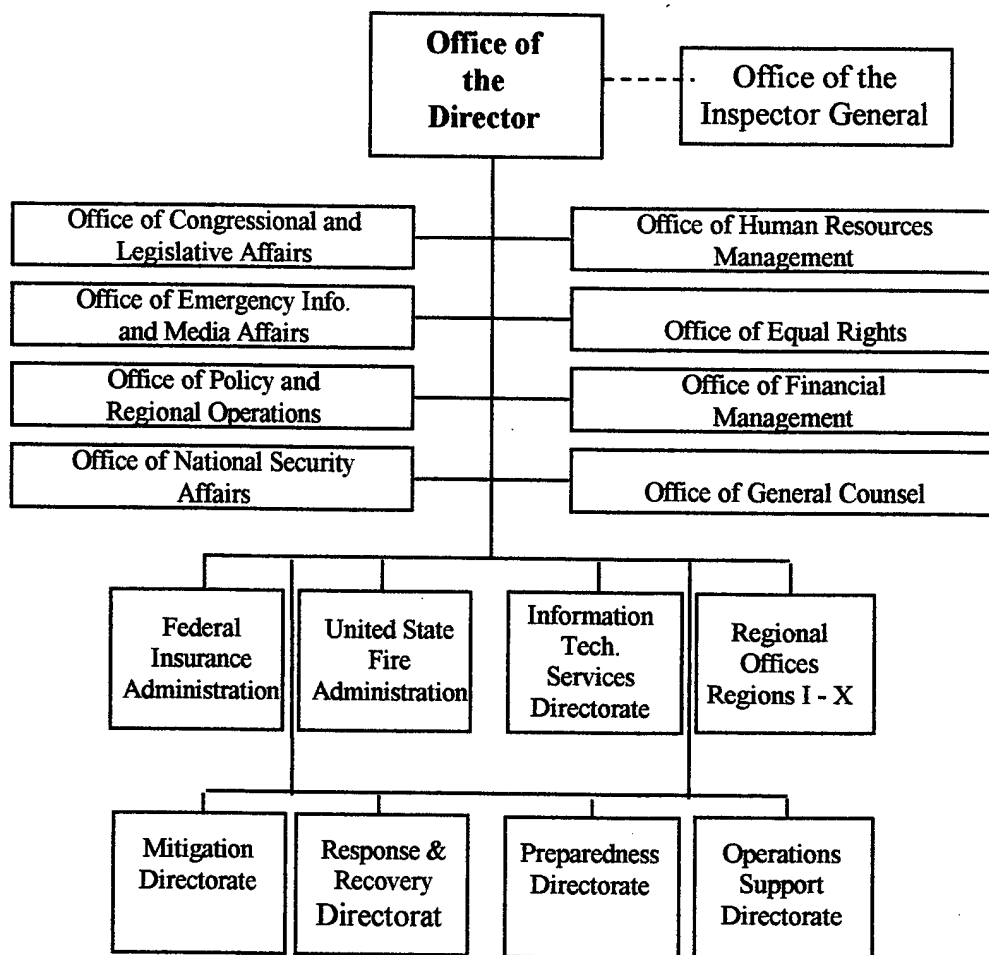


Figure 1. FEMA Organization

In order to manage federal assistance, FRP classifies assistance into twelve emergency support functions and assigns primary responsibility for them. FEMA is also tasked as the lead federal agency for consequence management, defined as actions taken to provide an immediate response to an incident to contain and mitigate its effects.

Functions

FEMA functions as both an education and relief agency. From advising construction and contracting businesses on building codes to flood plain management,

FEMA "teaches people how to get through a disaster" (FEMA 1998). FEMA also "helps to equip local and state emergency management agencies for disaster preparedness, coordinates federal response to a disaster, makes disaster assistance available to states, communities, businesses and individuals, trains emergency managers, supports the nation's fire service, and administers the national flood and crime insurance programs" (FEMA 1998).

The system for responding to all federally declared natural and man-made disasters is the FRP. The FRP is used to respond to incidents requiring federal assistance. Disaster assistance comes from FEMA in many forms: individual and family grants, disaster unemployment assistance, crisis counseling, disaster housing assistance, legal services, veteran's assistance, tax relief, the National Flood Insurance Program, home disaster loans, business physical disaster loans, and economic injury loans. These functions or responsibilities fall within the various directorates of the FEMA organization. The Mitigation Directorate works to reduce the effects of a disaster or prevent a disaster, such as fires, from occurring. Mitigation efforts are effected through education campaigns, the re-zoning of activities (businesses, residences, and property), and training programs designed to develop the skills of emergency management agencies at the state and local-levels nationwide. The Response and Recovery Directorate works directly with FEMA's ten regional offices when a disaster occurs to coordinate for the proper equipment, personnel, and other resources to quickly return the disaster-affected area to normalcy. The Preparedness Directorate develops exercises and assessments that help state and local emergency management agencies to identify deficiencies in their existing programs and work to develop organizations and functions that meet challenges

in emergency management specific to the state or county. The Federal Insurance Program is the government unit that administers the National Flood Insurance Program.

FEMA continues to move toward improving federal and state emergency management.

FEMA has developed a survey instrument to help states assess their emergency management capabilities. The Capability Assessment for Readiness (CAR) focuses on identifying deficiencies or corrective actions that a state needs to take to strengthen its emergency management program. The CAR provides FEMA with a national emergency baseline or minimal standard. This standard [is based] on the results of the fiscal 1997 assessment, the pilot year of the assessment. CAR pilot results evolve into recommended practices and then become generally accepted standards for emergency management. The baseline [enables] states and FEMA to set improvement goals and measure progress (Beauchesne 1998, 4).

Authorities

FEMA manages federally declared disasters through the FRP.

FEMA carries out the FRP under the authorities of Public Law 93-288, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Public Law 100-707, 'the Stafford Act'. The act gives FEMA the authority to assign tasks to any federal department or agency in support of a disaster or emergency declared by the President. The Stafford Act authorizes the President to use personnel and equipment of the U.S. DoD to remove debris or temporarily restore essential public facilities and services in the aftermath of an incident that may ultimately qualify for a major disaster or emergency. This authority is delegated to the associate director of FEMA's Response and Recovery Directorate (Beauchesne 1998, 25).

The Stafford Act authorizes the president to provide assistance, including grants, equipment, supplies, and personnel, to a state for suppression of a forest or grassland fire on public or private lands that threatens to become a major disaster. This authority is also delegated to the associate director of FEMA's Response and Recovery Directorate.

FEMA coordinates this support through regional offices and may assign a Federal Coordinating Officer to facilitate assignment of resources and manage accountability.

Figure 2 depicts the relationship between support functions and the federal agency responsible for those functions.

SUPPORT FUNCTION

transportation
communications
public works and engineering
fire fighting
information and planning
mass care
resource support
health/medical services

urban search and rescue
hazardous materials
food
energy

LEAD AGENCY

Department of Transportation
National Communications System
Department of Defense
Department of Agriculture
FEMA
American Red Cross
General Services Administration
Department of Health and Human Services
FEMA
Environmental Protection Agency
Department of Agriculture
Department of Energy

Figure 2. Federal Emergency Management Relationships

Kansas Division of Emergency Management

Organization

The KDEM is the executive agency of the Governor of Kansas for emergency management. The Adjutant General (TAG) for the State of Kansas acts as the chief administrator for the KDEM and is titled as the Director of Emergency Management for the state. The adjutant general appoints a deputy director for the day-to-day management of the division. Located in the National Guard Headquarters in Topeka,

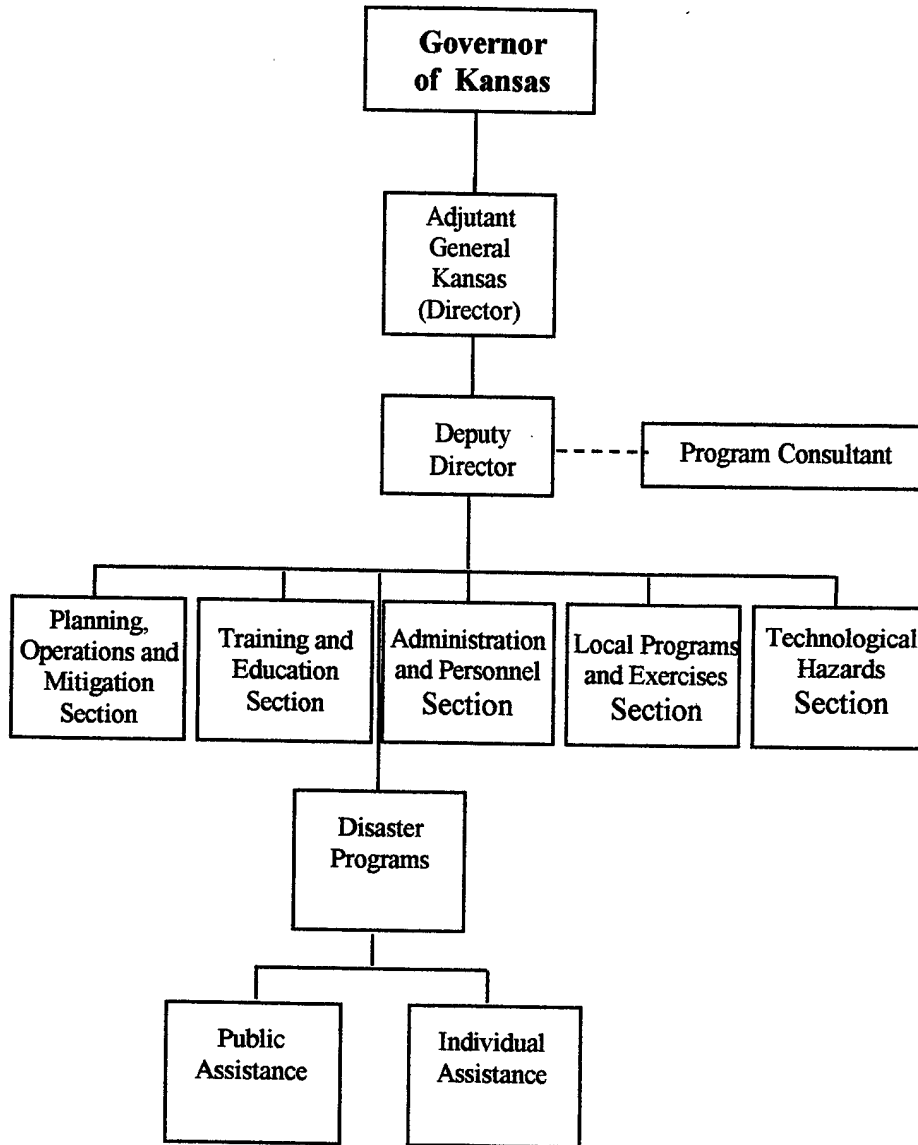


Figure 3. KDEM Organization

Kansas, the KDEM is assigned a full-time staff which, through the authority of the TAG, exercises the functions of emergency management as outlined Chapter 48, Article 9, of the Kansas Statutes Annotated.

The KDEM emerged from the Department of Civil Defense and became the Division of Emergency Preparedness in 1975. It was re-designated as a division of emergency management within the office of the TAG in July of 1994. The organizational structure of the KDEM is depicted in Figure 3.

Functions

Kansas State Act 48.904 defines Emergency Management as the "preparation for and the carrying out of all emergency functions, other than functions for which military or other federal agencies are primarily responsible, to prevent, minimize and repair injury and damage resulting from disasters" (Kansas State Acts, Chapter 48, Article 9). Under the authority of the TAG, the KDEM has the following responsibilities:

- To adopt, amend and repeal rules and regulations
- To cooperate with an advisory commission to the council of national defense through its division of state and local cooperation, or with any similar federal agencies, and with any departments or other federal agencies engaged in defense or emergency management activities
- To cooperate with emergency management agencies or councils and similar organizations of other states
- To cooperate with county city and inter-jurisdictional disaster agencies
- To supervise and direct investigations, and report to the governor with recommendations for legislation or other appropriate action as the TAG deems necessary, with respect to any type of activity or matter of public concern or welfare insofar as the same is or may be related to emergency management
- To appoint committees to aid the TAG in the discharge of the powers and duties conferred by this act
- To require and direct the cooperation and assistance of state and local governmental agencies and officials
- To do all acts and things, not inconsistent with the law, for the furtherance of emergency management activities (Kansas State Acts, Chapter 48, Article 9)

The KDEM also exercises administrative functions by providing management and policies to the emergency management offices of each county within the state. To that end, the following functions are set forth in Kansas State Act 48.928:

- Promulgate standards and requirements for local and inter-jurisdictional disaster emergency plans, including adequate provisions for the rendering and receipt of mutual aid.
- Periodically examine or review and approve local and inter-jurisdictional disaster emergency plans which are in accordance with the standards and requirements promulgated therefor.
- Establish and operate training or public information programs relating to emergency management, and assist counties and cities, the disaster agencies of such counties or cities and inter-jurisdictional disaster agencies, in the establishment and operation of such programs.
- Make surveys of industries, resources and facilities within the state, both public and private, as are necessary to carry out the purposes of this act.
- Plan and make arrangements for the availability and use of any private facilities, services and property for emergency management activities and, if necessary and if in fact used, provide for payment for such use under terms and conditions agreed upon.
- Establish a register of persons with types of training and skills important in emergency management activities.
- Establish a register of mobile and construction equipment and temporary housing available for use in a disaster.
- Prepare drafts or orders or proclamations for the governor as necessary or appropriate in coping with disasters.
- Serve, for all those agencies which regulate any matter affecting the transportation of hazardous materials:
 - (1) As the coordinating and supervising state agency; and
 - (2) To provide continuing liaison between such state agencies.
- Establish an informational system under which state agencies shall notify the division of emergency management.
- Cooperate with the federal government and any public or private agency or entity in achieving any purpose of this act and in implementing programs for disaster prevention, preparation, response, and recovery (Kansas State Acts, Chapter 48, Article 9).

The TAG of Kansas can and has

...adopt rules and regulations necessary to administer and implement the provisions of Article 9 of the Kansas State Constitution. Such rules and regulations shall include a schedule for the submission of emergency management budget requests by participating state and local government agencies and for the payment and disbursement of moneys from the nuclear safety emergency management fee fund. [Beginning in FY 93, the office of the TAG has prepared a] budget estimate for each fiscal year showing the total of operating expenditures and capital improvement expenditures projected to be incurred in administering this act during the [coming] fiscal year. The budget estimate under this act [is] prepared only after consultation with those persons liable for the fees imposed

under this act as to the costs necessary to enable state and local government agencies to perform their responsibilities in the event of an accident as a nuclear facility...The TAG [has] the duty, in administering this act, to prevent and eliminate any duplication of services or equipment (Kansas State Acts, Chapter 48, Article 9).

Authority

The KDEM has direct tasking authority over the Emergency Operations Center (EOC) in the National Guard Headquarters, the Wolfcreek EOC and training facility, and the Office of Emergency Preparedness of each county within the state. There are liaison departments within the KDEM responsible for coordination with other agencies within Kansas for emergency management. Those agencies are: The Department of Public Education, the Department of Public Safety, and the State Police of Kansas. While not a part of the organizational structure, other agencies--the Sheriff's Office of each county, the Police and Fire Departments of each city within Kansas, and the Hazardous Material Management Team--play a significant role in the preparation, response, recovery and mitigation actions associated with disaster events that occur within Kansas.

It must be noted that nowhere does Article 9: Emergency Preparedness for Disasters, or any subparagraph therein does it describe direct tasking authority the KDEM has over the National Guard of the State of Kansas. It must be assumed, therefore, that, because the TAG is both the senior military representative of the Kansas National Guard, as well as the Director of the Division of Emergency Management, in the event of an emergency--at whatever level (i.e., county or state)--the TAG, and therefore the KDEM, has tasking authority over the Kansas Army National Guard via a standing operating procedure or prearranged agreement for use of personnel and equipment and reimbursement thereof.

Indiana

Organization

The Indiana State Emergency Agency (SEMA) is headquartered at the Indiana Government Center South in Indianapolis. The SEMA "is Indiana's lead agency for the coordination of emergency management programs and response measures. Its mission is fourfold: to prepare the citizens of the State of Indiana with the knowledge and expertise necessary before a disaster strikes; to respond during a disaster; to assist with recovery efforts after a disaster; and to mitigate by taking the necessary steps to prevent or lessen the effects of a disaster before and after one occurs" (Indiana State Emergency Management Agency 1997).

The SEMA is composed of two divisions, the Emergency Management Division and Emergency Medical Services Division. The Office of the Executive Director for State Emergency Management and Department of Fire and Building Services has authority over the SEMA. The SEMA itself has a Deputy Director for Emergency Management who manages four sub organizations under the category of Emergency Management. For the purposes of this study only the organizational structure, functions and authority of the Emergency Management Division are discussed.

Within the Emergency Management Division there are four subdivisions that manage all aspects of emergency management, except emergency medical services. The Technical Hazards Division has a Radiological Protection office and Civil Defense Office. The Preparedness Division has three sub-offices: a Civil Engineer, A Civil Defense Coordinator and the Chemical Stockpile Emergency Preparedness Program. The Operations Division has three sub-offices: Communications, Emergency Operations

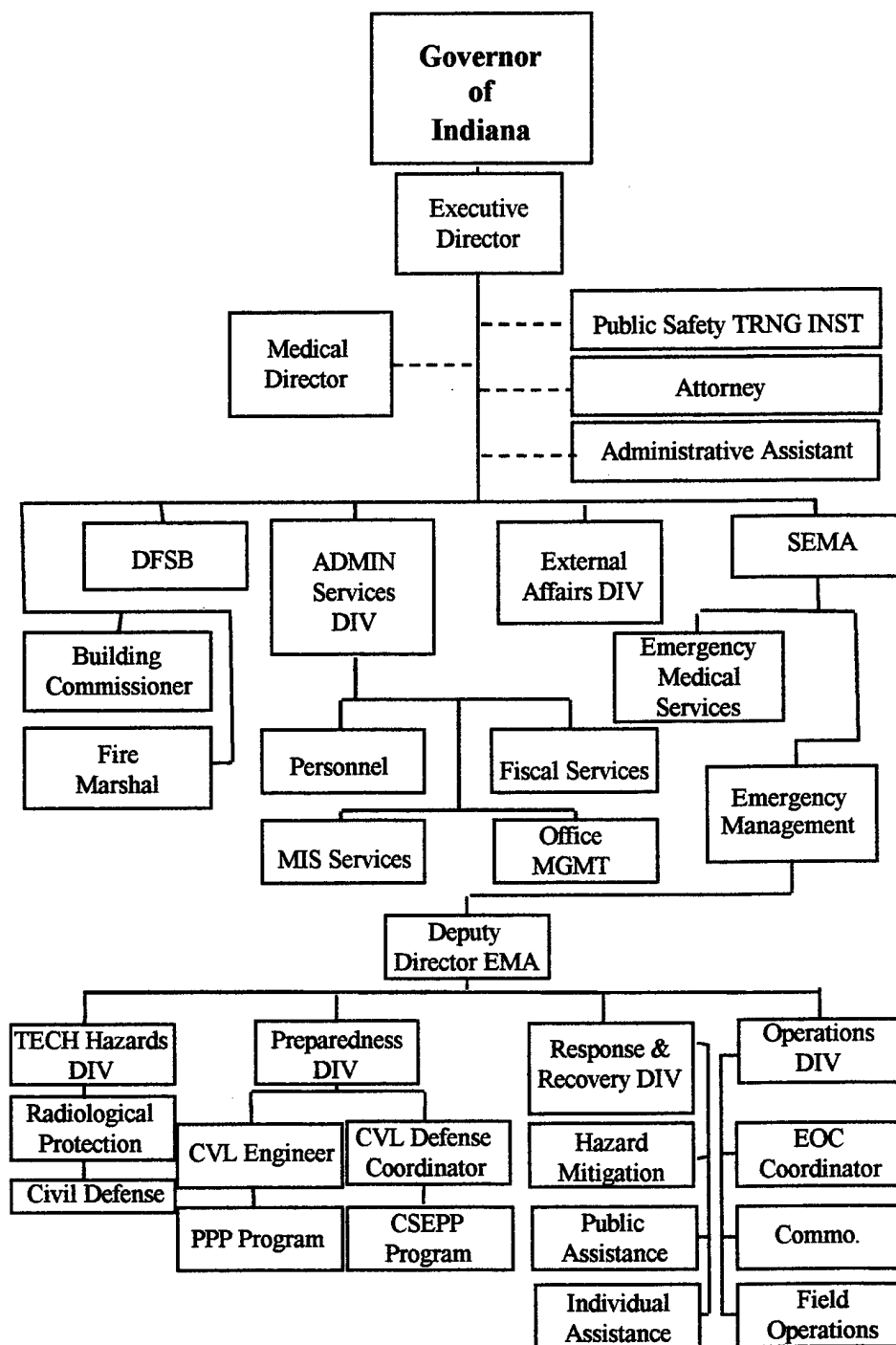


Figure 4. Indiana SEMA Organization

Center Coordinator, and a Field Operations Office. The organizational structure for the Indiana SEMA is depicted in Figure 4.

Functions

The "Indiana General Assembly, in Indiana Code 10-4-1-2 and 10-8-2-1, established the Indiana State Emergency Management Agency for the purposes of safeguarding the citizens of the State of Indiana from disasters or emergencies" (Indiana State Emergency Management Agency 1997). Code 10-4-1-2 authorizes and provides for coordination of activities relating to disaster prevention, preparedness, response, and recovery modeled after the FEMA functional model. Further, Code 10-4-1-2 authorizes and provides for protection of the public peace, health, safety, and preservation of the lives and property of the people of the State of Indiana. The code provides instructions allowing the SEMA to coordinate the use of common support personnel among all agencies within the SEMA, provides for budgetary savings, and promotes common solutions to common issues concerning emergency management. The Governor of Indiana has set forth instructions within Executive Order 97-25 (within which the codes named above are found) to continue a unification of support between the SEMA and the Indiana Fire and Building Services.

The SEMA assists political subdivisions within the state, their disaster agencies, and interjurisdictional disaster agencies to establish and operate training and public information programs. Code 10-4-1-2 details additional functions of the SEMA as follows:

- To make surveys of industries, resources, and facilities within the state, both public and private, as are necessary to carry out the purposes of emergency management.
- To plan and make arrangements for the availability and use of any private facilities, services, and property, and if necessary and if, in fact, they are used, provide payment for use under terms and conditions agreed upon by the SEMA and the owning entity for the purposes of emergency management.
- To establish a register of persons with types of training and skills important in emergency prevention, preparedness, response and recovery.
- To establish a register of mobile and construction equipment and temporary housing available for use in a disaster emergency.
- To prepare, for issuance by the governor, executive orders, proclamations, and regulations as necessary or appropriate in coping with disasters.
- To cooperate with federal government and any public or private agency or entity in achieving any purpose in implementing programs for disaster prevention, preparation, response and recovery (Indiana State Code, Article 31).

The SEMA also has the function of ascertaining what means exist for rapid and efficient communications in times of disaster emergencies. It must consider the desirability of supplementing these communications resources or integrating them into a comprehensive intrastate or state-federal telecommunications or other communications system or network. Upon studying the character and feasibility of any system or its several parts, the department should evaluate the possibility of multipurpose use thereof for general state or local governmental purposes and make recommendations to the governor as appropriate.

Authority

In the event of disaster or emergency beyond local control, the SEMA, via authority granted by the governor, may assume direct operational control over all or any part of the emergency management functions within the state. In performing the duties authorized by the governor the SEMA may make, amend, and rescind the necessary orders, rules, and regulations to carry out the provisions of Indiana Code 10-4-1-6 with

due consideration of the plans of the federal government. Additionally, the SEMA may cooperate with the President, the heads of the armed forces, FEMA, and the officers and agencies of other states in matters pertaining to emergency management and disaster preparedness, response and recovery of the state and nation. This cooperation may be manifest in:

- The mobilization of emergency management forces and other tests and exercises.
- Provide warnings and signals for drills, actual emergencies, or disasters.
- Shut off water mains, gas mains, electric power connections and suspend of all other utility services.
- Conduct civilians to locations away from disaster areas, and the movement and cessation of movement of pedestrians and vehicular traffic during, prior, and subsequent to drill, actual emergencies, or other disasters.
- Evacuate and receive civilians.
- Take actions and give such directions to state and local law enforcement officers and agencies as may be necessary for the purpose of securing compliance with the provisions of Code 10-4-1-6 and with orders, rules, and regulations made pursuant thereto.
- Utilize the services and facilities of existing officers and agencies of the state and of political subdivisions. All officers and agencies of the state and of political subdivisions shall cooperate with and extend their services and facilities to the SEMA, via authority granted by the governor in accordance with Code 10-4-1-6 (Indiana State Code, Article 31).

Finally, When an executive order or proclamation of a state disaster emergency is made the disaster response and recovery aspects of the state are activated. When this is done the SEMA exercises authority to:

- Deploy and use of any forces to which the plan or plans apply.
- Use or distribute and use of any supplies, equipment, materials, and facilities, assembled, stockpiled, or arranged to be made available under Indiana Code 10-4-1-6 or any other law relating to disaster emergencies.

During the continuance of any state of disaster emergency the governor is commander-in-chief of the organized and unorganized militia and of all other forces available for emergency duty. To the greatest extent practicable, the governor shall delegate or assign command authority by prior arrangement embodied in appropriate executive orders or regulations.

North Dakota

Organization

The North Dakota Division of Emergency Management emerged from Public Law (PL) 920, the Civil Defense Act of 1950, as amended PL 100-707, Robert T. Stafford Disaster Relief and Emergency Assistance Act and NDCC 37-17.1, North Dakota Disaster Act of 1985. The division is located in Bismarck. "The Governor of North Dakota has the overall responsibility to direct and control state government operations necessary to support local emergency or disaster operations. [The governor exercises his emergency responsibilities]...by executive proclamations, orders, and directives to facilitate emergency operations... He delegates authority to coordinate emergency operations to a State Coordinating Officer" (SCO) (North Dakota Division of Emergency Management 1993, 2). The SCO for the North Dakota Division of Emergency Management is the Adjutant General.

The SCO shall be the Director of the Division of Emergency Management, unless otherwise directed by the governor, and is responsible for coordinating all state emergency operations" (North Dakota Division of Emergency Management 1993, 2). Departments of state government are assigned tasks and responsibilities in nine functional areas as functional coordinators. The functional areas are subdivisions of The

Division of Emergency Management. The organizational structure for the North Dakota Division of Emergency Management is depicted in Figure 5.

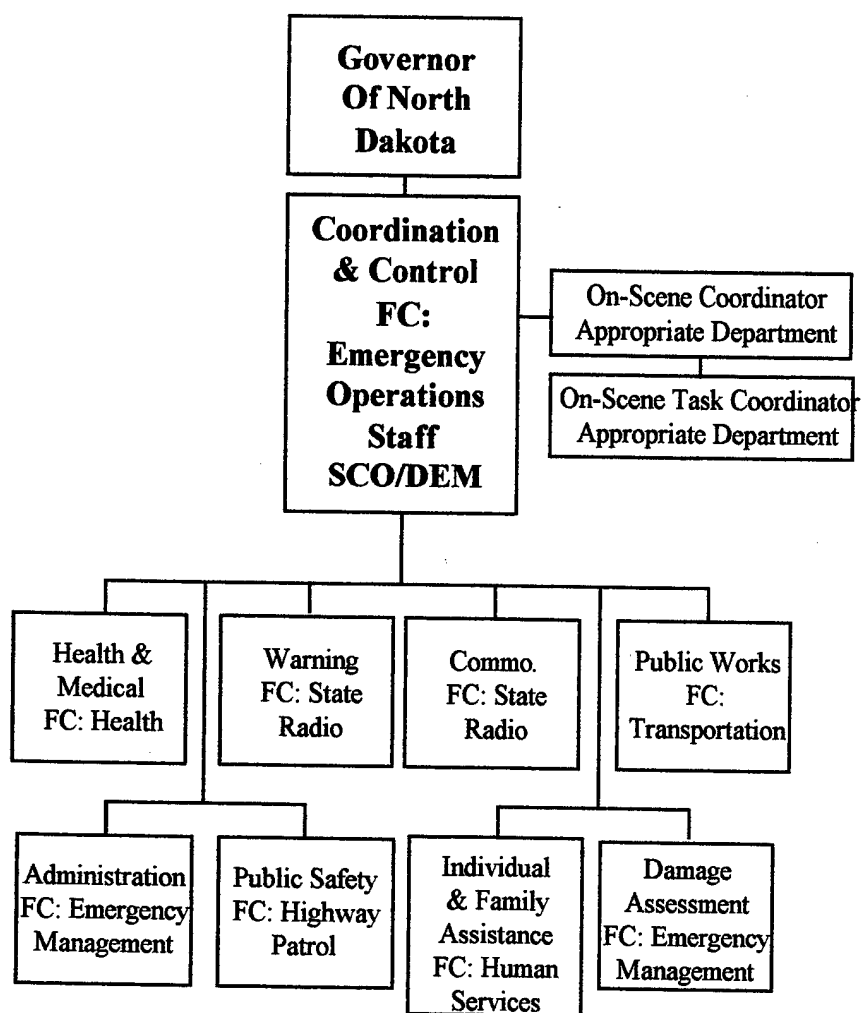


Figure 5. North Dakota Division of Emergency Management Organization

Functions

The North Dakota Division of Emergency Management has aligned functions and authorities with the organizational structure of the agency. "Significant responsibilities

common to emergencies and disasters are grouped into nine areas, termed functions. The departments having responsibility by law or day-to-day resource and operational capability within each of these functions are identified and assigned by specific task/responsibility" (North Dakota Division of Emergency Management 1993, 6). The functions and authorities of the North Dakota Division of Emergency Management listed as specific tasks and responsibilities of each Functional Coordinator Office, are located in Appendix A.

The Disaster Declaration Process

The following is a generalized description of the disaster declaration process. The specific process varies from state to state. The declaration of a federal disaster has been simplified over time. The process is still complex but has been modified to allow local and state agencies to maximize resources before requesting aid from the federal government.

When a domestic disaster occurs, the first relief assistance is provided by the local police, fire departments, and rescue organizations. Depending on the severity of the disaster, the next level of aid is normally through the state disaster relief organizations that can call upon all state assets. The governor will appoint a state coordinating officer in major disasters and can put the National Guard on state active duty. When required, FEMA will appoint a coordinating officer to correlate federal disaster relief assistance. FEMA and that officer then function as the vital link between state requirements and federal agency assistance (Grange and Johnson 1997, 108).

When an emergency situation arises the first element of a state's emergency management agency to initiate the State Response Plan is a member of the police force or fire department. In certain instances one of these agencies can begin the assessment process to determine if the situation exceeds the capabilities of the city, county or interjurisdictional region. In most cases there is an emergency management

representative located in a county municipal building or the city hall of the city wherein lies the county seat. This representative can complete an assessment or determine the required specialized personnel for the assessment. If the situation is determined to be beyond the response or recovery capabilities of the resources controlled by the emergency management office of the county, a state regional emergency management office may be activated or the state EOC may be called for further assessment of the situation. If a state EOC is notified of an emergency or disaster situation that has occurred where the proportion of the event or certain circumstances of the event have exceeded the capabilities of the county within which the event has occurred, that state EOC may notify the FEMA regional office for a joint assessment of the affected area.

The SEMA completes its assessment of the affected or potentially affected area(s) and makes a recommendation to the Governor for declaration of a state disaster (if the situation so warrants). If the situation has exceeded, will exceed, or has the potential of exceeding the capabilities of the state emergency management resources, the governor may then request a federal declaration from the President. In most cases it is at this point that a representative from the FEMA regional office will travel to the affected area to conduct an assessment and then make a recommendation through the director of FEMA to the President. If the situation is grave the President can then declare the area as a major disaster area.

Figure 6 depicts a generalized schedule of events when a disaster occurs. The organizations along the right side of the figure are the major contributors to the response and recovery efforts involved in a federally declared disaster.

At each level, local, state regional (if regional offices within the state are formed), state, and federal emergency managers respond to the event with resources within their

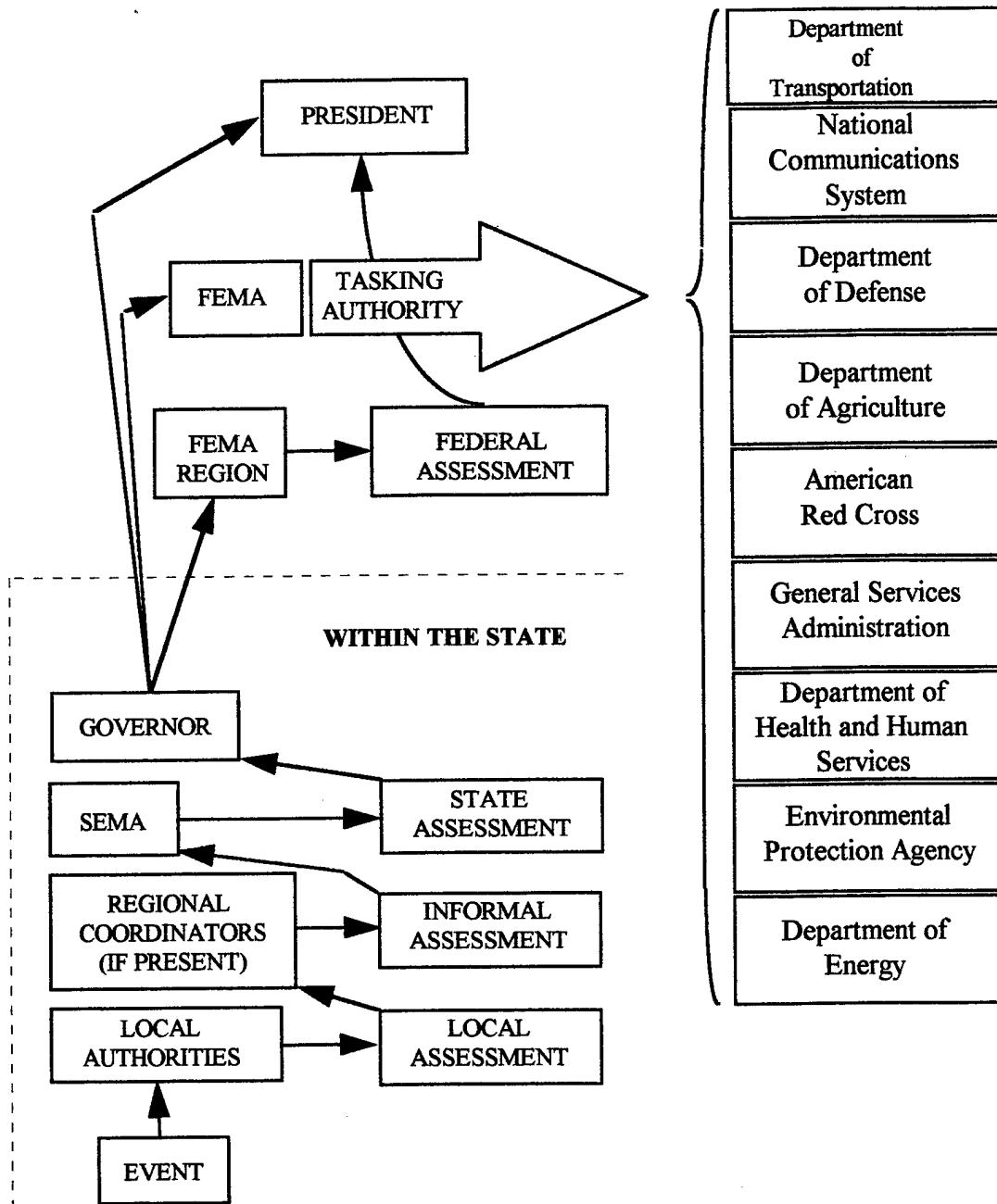


Figure 6. The Disaster Declaration Process

authority. The assessment process at each level helps to identify whether the response requires assets beyond the jurisdiction's capabilities. The criteria required for advancing a request for aid to higher authorities vary from state to state and are based on the population and capabilities of the county and state.

The information provided in this chapter prepares the reader for the qualitative analysis to follow. The organizations, functions and authorities described within this chapter establish a baseline of performance measures. Recommendations can therefore be generated from reviewing how these emergency management agencies responded to the emergency event case studies in chapter 3. The information described and depicted above has been extracted from documents provided by each agency. Recommendations for the organization of functions or responsibilities may also be derived from the data.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of emergency management is to protect the lives and property of our citizens. My vision is a fully integrated emergency preparedness system (Graves 1998).

Introduction

The research methodology for this study is qualitative analysis, whereby the efficiency of a SEMA is assessed against criteria as defined in this chapter.

Characteristics of the SEMA, as detailed in chapter 2 (i.e., authority, functions, and organization), are evaluated by four phases of the disaster life cycle as evaluation criteria (i.e., preparedness, response, recovery, and mitigation). The definition of quality, for the purposes of this study, is the efficiency with which a SEMA prepares for, responds to, and aids citizens in recovering from a disaster, and the mitigating measures developed as a result of lessons learned, designed to reduce the cost of preparedness, response, recovery, injuries or loss of life, and damage to private and public property following a disaster or before a disaster occurs.

Each criterion is defined below for the purposes of this study. These definitions establish parameters within which "quality" is evaluated. To ensure tangible measurements of quality within the definition provided above, the parameters established are very narrow and may be applicable to only one set of circumstances. Since disaster events reviewed in this study have occurred in areas that differ in demographics and other factors, every attempt has been made to isolate the performance evaluation from contrasts

	PREPAREDNESS	RESPONSE	RECOVERY	MITIGATION
ORGANIZATION	+	+	N/A	N/A
FUNCTIONS	-	+	+	+
AUTHORITY	N/A	-	+	N/A

Figure 7. Kansas Flood June 1998

in demographics of the affected area. For example, a winter storm in Kansas may affect the population of a large metropolitan area such as Lawrence. The number of people victimized may be much larger than those victimized by a winter storm in a rural region of North Dakota. Therefore, the number of people provided disaster assistance is not a measure of efficiency; rather, the breadth of services, or the time required for the services to be provided, reflecting the authority or functions of the SEMA, is the measure of efficiency.

To guide the evaluation, each characteristic of the SEMA is evaluated by four aspects of the disaster life cycle. This type of evaluation lends itself to a simple evaluation matrix. Although the analysis of each case study does not include a corresponding matrix, it is important to remember that the conclusions or recommendations for improved efficiency were derived using this model. Figure 7 below depicts a hypothetical evaluation matrix.

In chapters 4, 5, and 6, case study reviews of disaster events (occurring in Indiana, North Dakota, and Kansas, respectively) are provided which establish the nature

of past events, the number of people and businesses, and amount of property affected by the events. Following each review an analysis of the SEMA's activities is provided to explain in detail what organizational, functional or mitigating action the SEMA did before during and after the event. For example, an event is examined in which a commercial airliner has crashed. The organization of the KDEM may facilitate the response to the event, thus resulting in a reduced number of lives lost and property damaged. Specific elements of the organization, those that played prominently in the successful management of the event, are described to depict the reasons the efficiency was apparent. This explanation provides a departure point from which recommendations are made in each of the analysis chapters (i.e., chapters 4, 5, and 6). An example conclusion from the hypothetical aircraft accident described above may be that the KDEM had been organized with specially trained personnel who would know the nature of an aircraft accident and be able to determine the required fire fighting equipment at the crash site. Further, a function of the KDEM may be to activate the state EOC in the event of an aircraft accident, thus enabling the proper assets to arrive at the crash site in a timely manner so as to reduce the amount of property damage resulting from a post crash fire. Additional conclusions may be:

The response team of the KDEM, having been activated as normal operating procedures of the EOC, contacted the local fire and rescue unit, which arrived at the scene of the accident within 20 minutes of impact. The post crash fire was extinguished, limiting property damage to \$4000.

The communications network of the KDEM facilitated the notification of a neighboring county's fire department that had equipment required to extinguish a commercial grade jet fuel fire.

Properly trained personnel within the KDEM, notified of an aircraft accident as standard operating procedures and having the ability to focus required equipment to the crash site, reduced the response time and recovery costs of this event.

The performance of the three SEMAs is analyzed within the framework of these disaster case studies. The performance of each emergency management agency is evaluated with respect to several criteria. The criteria attempt to assess the efficiency of the SEMA as to how well the organization is prepared for disaster events; the timeliness of the initial and subsequent responses to disaster notifications and declarations; the timeliness, cost, and/or effects of the recovery effort; and the mitigating measures employed by the SEMA to reduce the effects (cost, loss of life, damage to property) or reduce the possibilities of future similar disaster events.

The organizational structures, functions and authorities explained in chapter 2, establish the foundation upon which the analysis is conducted. In some cases efficiencies (or deficiencies) are targeted in the relationship the SEMA has with the FEMA or some other federal or state government organization. In other cases the lack of authority the SEMA has over potentially valuable disaster response assets may indicate deficiencies in the SEMA. The organization of the SEMA itself may demonstrate excellent dissemination of information to agencies within the state involved in disaster response activities, the general public, and businesses, serving to better prepare these people and institutions for possible future disaster events. Likewise, the organization or functions

therein may indicate shortfalls in communications affecting the ability of the SEMA to effectively prepare, respond, recover or mitigate disaster events.

Analysis Criteria

Each disaster event is reviewed, and then specific features of the SEMA characteristics associated with the event are evaluated via several criteria. The SEMA characteristics are the organization, functions, and authority of the SEMA. The evaluation criteria are preparedness, response, recovery, and mitigation. The data obtained in the review of the event may not support a valid assessment of quality for each characteristic of the SEMA.

The three aspects of the SEMA of which efficiency is evaluated are defined as:

1. Authority. The ability of the SEMA to bring resources, assets and /or organizations into the preparations, response, recovery, or mitigating actions associated with the event being examined.
2. Functions. The activities of the offices within the organization before, during and after an event. Additionally, a measure of the range of functions that serve to provide necessary resources to disaster victims. For example, implementation of the emergency food stamp program or expansion of that program when it becomes apparent that the initial affects of the program have not addressed the needs of all affected people.
3. Organization. The structure of offices within the SEMA designed to implement all functions described in chapter 2. The ability of the SEMA organization to adapt to the emergency/disaster relief needs.

The four evaluation criteria are defined as:

1. Preparedness. Those activities, programs, and systems that exist prior to an emergency that area used to support and enhance response to an emergency or disaster.
2. Response. Programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.
3. Recovery. Long-term activities and programs beyond the initial crisis period of an emergency or disaster designed to return all systems to normal status or to reconstitute these systems to a new condition that is less vulnerable.
4. Mitigation Measures. The effective use of after action reviews, training exercises or other activities designed to better prepare a SEMA and the population and property it serves for future disaster events.

The qualitative analysis approach provides the best method to evaluate SEMA efficiency. The strengths or efficiencies demonstrated by the KDEM appear in chapter 6 as recommendations for sustainment. Efficiencies highlighted in the analysis of the other SEMAs appear as potential recommendations for improvement of the KDEM.

CHAPTER 4

INDIANA: ANALYSIS AND RECOMMENDATIONS

Introduction

The information in chapters 4, 5, and 6 provides brief overviews of several disaster or emergency events that have occurred in the states of Indiana (chapter 4), North Dakota (chapter 5), and Kansas (chapter 6). Each event involved some aspect of the SEMA. Each disaster case study is divided into two sections. The first section provides a synopsis of the disaster event, the second section is an analysis of the assessments providing indicators of efficiencies within the organization, functions and authorities of the SEMA. Each analysis is followed by a corresponding recommendation.

Case Study No. 1: Ohio River Flooding, Indiana, 1997

Case Study Review

The days leading up to 28 February 1997 were marked by a series of severe storms that hit southern Indiana and Northern Kentucky. As a result of the intense rainfall the Ohio River spilled over its banks and poured into a floodplain that stretched along the entire southern border of the state. Within days all 13 counties along Indiana's southern border were in severe flood conditions. Based on the assessments of personnel from the affected counties and the State Emergency Management Agency (SEMA), on 3 March 1997 Indiana Governor Frank O'Bannon declared a state of emergency in ten of the thirteen counties along the Ohio River Flood Plain. When the Indiana SEMA contacted FEMA for a joint assessment of the affected area, the FEMA Region V representative quickly determined that the situation was well beyond the response and recovery capabilities of assets within the State of Indiana. On 5 March 1997 Governor

O'Bannon declared a state of emergency in three additional counties along the Ohio River.

The data do not show when the governor received the assessment information from the Indiana SEMA, but on 5 March 1997 he wrote a letter to the President requesting that 13 counties of Southern Indiana be declared a federal disaster area and on 6 March 1997 the President officially complied. By 7 March 1997 FEMA assigned Barbara Russell of FEMA's regional office in New York as the Federal Coordinating Officer.

Between 6 March 1997 and 9 April 1997 FEMA and the Indiana SEMA established a Joint Information Center (JIC) and several Recovery Information Centers (RIC) to manage the response and follow-on recovery efforts. Each RIC was manned with representatives from FEMA, the Indiana SEMA and several volunteer organizations to aid flood victims in obtaining information about the various programs designed to rapidly return the situation to normalcy. The actual recovery effort lasted well beyond 9 April 1997 but the majority of federal-state effort was focused during that period.

From a JIC, FEMA and the Indiana SEMA issued no fewer than 60 public service announcements using all forms of media to get word to people affected by the flood. Early in the recovery effort FEMA and the Indiana SEMA publicized several programs that provided many forms of aid to home and business owners, and farmers who had property damaged or whose income was somehow affected by the flood. The programs included:

Temporary housing for displaced flood victims by urging rental property owners and managers with available temporary housing to contact the JIC.

"Hazards to recovery efforts" public service announcements providing flood victims with safety tips upon return to their homes and businesses to assess damage.

"Consumer beware" public service announcements informing flood victims to exercise caution when hiring contractors to help with recovery efforts and providing tips for selecting valid contract support.

Disaster housing assistance, administered by FEMA, for individuals and families whose homes were made uninhabitable by the flooding. The program provides funding for alternate rental housing and home repairs.

Low-interest loans from the U.S. Small Business Administration for homeowners, renters and business owners for the repair, replacement or rebuilding of disaster-damaged property.

Economic injury loans, also from the U.S. Small Business Administration, to provide working capital to small businesses and small agricultural cooperatives.

Technical advice on common-sense strategies to minimize loss in future disasters.

Assistance from representatives of various state agencies providing information about state programs.

Emergency food stamps. The Indiana Family and Social Services Administration received waivers from the U.S. Department of Agriculture to issue the stamps to those victims whose homes or belongings were damaged or destroyed, or who lost income, food or money due to the flood. The emergency food stamp program was implemented because FEMA and the Indiana SEMA determined they were unable to quickly handle the number of potentially eligible households affected by the disaster. The waivers issued by the Department of Agriculture allowed the Family and Social Services

Administration's Division of Family and Children to determine eligibility for flood victims based on available income minus shelter and disaster-related expenses.

The individual and family grant program. The grants are used to cover such disaster-related expenses as essential home repairs, replacement of personal property, transportation, and the rental of equipment.

Crisis counseling to assist people who have been affected by emotional distress, high anxieties and other mental strain. Other programs provided through crisis counseling staffs included outreach programs, educational support and services for the elderly.

Farm assistance provided through FEMA by the Department of Agriculture to assist farm owners and workers in their recovery from significant losses by flood-waters.

Tax assistance provided by tax specialists organized by the Indiana SEMA. Tax law provides the taxpayers the option of claiming uninsured disaster casualty losses on either their 1996 tax returns or their 1997 forms for 1997. Tax payers filing claims for losses were required to put the words "March Flood" at the top of their returns and on their envelopes to help the IRS identify and expedite processing. Immediate special tax deductions were available to residents of the counties hardest hit by the flood. The executive order signed by Governor O'Bannon enabled the Indiana Department of Revenue to waive any penalties accrued between 15 April 1997 and 15 July 1997 for residents of the 13 counties whose tax filing was hampered by the flood. The executive order signed by the governor had no bearing on filing federal taxes.

Disaster unemployment benefits were available through the Indiana Department of Workforce Development for people unemployed as a result of the disaster, who were not otherwise qualified for unemployment compensation.

Each public service announcement provided toll free numbers (including a number for the hearing and speech impaired) for flood victims to call to apply for disaster relief. Additional numbers provided in public service announcements provided help lines for general information. Yet other numbers were provided for victims to check the status of aid applications.

As more victims placed calls into the JIC, FEMA and the Indiana SEMA activated additional RICs, eventually 11 in all. Some of the volunteer organizations manning the RICs were: The Salvation Army, Adventist Community Services, The American Red Cross, Gleaners (a state level food bank) and local food banks, Community Mental Health Centers, State Convention of Baptists, the United Methodist Church, Church of the Brethren, Church World Service, Dare to Care, Mennonite Disaster Services, and Catholic Charities. The Indiana Voluntary Organizations Active in Disasters consists of many volunteer agencies that worked closely with FEMA and the Indiana SEMA, and other emergency managers during recovery operations following the flood. These agencies provided a wide range of services, such as food stamps, cleanup, cleaning supplies, repairs, counseling, advocacy, clothing , and shelter.

Many needs of flood victims were provided by agencies operating in the RICs. From replacements of prescription eyeglasses to help in repairing a damaged roof, disaster victims could receive assistance from one or more of the relief agencies operating in the various RICs

By 13 March 1997 FEMA and the Indiana SEMA had organized teams of damage inspectors to visit people who filed applications for assistance. The person would be contacted telephonically first to schedule an appointment and within ten days an inspector would conduct an assessment. In some cases flood victims provided a phone number where they were originally staying immediately following the flood. This presented a problem to relief workers in that when they called the victim at the number provided the person had left this original location preventing the scheduling of the damage assessment appointment.

On 1 April 1997 FEMA announced that government units in ten Indiana counties were eligible to apply for federal disaster assistance designed to help pay for damage to public facilities. This public assistance declaration amended the original federal disaster declaration issued by President Clinton on 6 March 1997 as a result of losses during the flood. Under the amended declaration, units of government in ten counties were able to apply for federal funds to pay 75 percent of the approved costs for repairing or replacing damaged public facilities, such as buildings, roads, bridges and utilities. The remaining 25 percent cost was still assumed by the state (12.5 percent) and local governments (12.5 percent). The additional assistance was added after FEMA reviewed new information concerning damages to public facilities after the flood. Disaster funding was also available to some private, non-profit organizations, including fire departments, certain educational institutions and facilities that provided essential government services affecting health and safety. By contacting a state public assistance officer at the federal coordinating/state coordinating field office, government units could file a "Notice of

Interest." FEMA and the Indiana SEMA placed a "not later than" date of 30 April 1997 on government units wishing to apply for aid.

FEMA, the Indiana SEMA, and local emergency managers identified significant issues of flood victims during the recovery effort. The first was the question of rebuilding in the floodplain or floodway. The Indiana Code, adopted in 1947, is stricter than federal flood insurance requirements. Many flood victims claimed that because the land was theirs they could with it what they wanted. Others complained they weren't told about the restrictions and had been paying taxes on what is now useless land. Some victims were willing to waive assistance if they could return to flooded areas. The second issue was that of buyouts. In the aftermath of the flood Kentucky (also severely affected by the flood) was actively pursuing relocation of flood victims out of the floodplain and floodways. The key problem was that the amount of mitigation funds available is based on Public Assistance Funding, and Kentucky was eligible for far more Public Assistance than Indiana. The end result was limited money for relocation available to Indiana flood victims. Finally, residents of Grandview, Indiana, believed that a culvert under State Road 66 was the source of flooding. They tried to get the Department of Transportation to install a floodgate, but the Department of Transportation had indicated that the roadbed was not strong enough to act as a levee. A Department of Transportation representative had apparently missed a town meeting held on 21 March 1997 when the problem was discussed.

On 9 April 1997 Governor O'Bannon suspended the customary cost share assumed by local jurisdictions because the disaster had and would continue to place financial hardships on those affected jurisdictions. This meant that the State of Indiana

paid the full 25 percent state/local share required by the federal government (as opposed to 12.5 percent state and 12.5 percent local). In the same executive order Governor O'Bannon indicated that the state would pay the full 25 percent state/local share for eligible hazard mitigation projects.

On 10 April 1997 representatives from FEMA's hazard mitigation team began providing homeowners individual guidance on cost-effective ways of rebuilding to minimize future damages. Homeowners who had applied for Small Business Administration loans could request an additional 20 percent above their loan amounts to use on mitigation projects. Another mitigation measure employed by FEMA was public service announcements encouraging homeowners and renters to purchase flood insurance through the National Flood Insurance Program, administered by the Federal Insurance Administration, a part of FEMA. Flood insurance became available to residents of communities that had agreed to adopt and enforce floodplain management practices. Benefits of the National Flood Insurance Program include:

Eligibility for secured financing to buy, build or improve structures located in a Special Flood Hazard Area.

Protection against uninsured loss in the event of a flood; standard homeowners insurance policies do not compensate for flood damage.

Broad coverage. Flood insurance covers losses even if the flood is not declared a major disaster by the federal government.

It is important to note here that Federal Law requires people who receive disaster assistance through Small Business Administration loans or the Individual and Family Grant program to buy and maintain flood insurance as a condition of receiving disaster

assistance. If flood insurance is not purchased repeat victims may be ineligible for some assistance programs in the future.

Case Study Analysis

Organization

Analysis. The organization of the Indiana SEMA provided training to emergency managers throughout the state, funding for the development of preparedness programs at the state and local levels, liaison with FEMA directorates, and organizations and procedures that facilitated a rapid response to the flood. The combination of these organizational factors contributed to an efficient response and recovery effort.

The case study reveals a rapid response by the Indiana emergency management system from local emergency managers to the executive director and Governor. Only three days after flood-waters spilled over the banks of the Ohio River into floodplains in thirteen counties the Governor declared a state of emergency in ten of the thirteen counties affected. Likewise, the federal declaration--only three days later--was also very rapid.

Chapter 1 shows the Indiana SEMA having a Preparedness Division, modeled after, but more robust in responsibility than the FEMA Preparedness Directorate. Moreover, the organization of three major elements of emergency management within the Division ensured that emergency managers were acutely prepared for the flood.

Recommendation. The Preparedness Division of the Indiana SEMA is modeled after the FEMA Preparedness Directorate but is tailored to the specific needs of the state. By modeling state emergency management sub organizations after those of FEMA, a direct correlation evolves providing for efficient coordination throughout the disaster life

cycle. Moreover, during response and recovery operations FEMA directorates can work closely with similar offices at the state level to reduce the time and required coordination to employ appropriate disaster aid programs. Advances in procedures and technology at the federal level is facilitated by having an organizational structure that provides for similar activities at the state level. Direct liaison of SEMAs to directorates in FEMA cultivates strong relationships and provides communications links between local, state, and federal offices that share similar responsibilities.

Analysis. The Public Safety Training Institute, an organization subordinate to the Executive Director for State Emergency Management, provides ongoing disaster preparedness training to all emergency managers within the state. The education provided to the staff of the SEMA was key to the success of the agency in managing the 1997 flood. Recurring training in disaster preparedness benefits emergency managers throughout the state, as well as the citizens they support. Ralston himself became the executive director on 28 February 1997, the day of the flood, and indicated that "Because I had worked with the agencies [associated with emergency management] during my tenure as Director of the Department of Natural Resources, I was confident that this disaster would come to the successful conclusion that we experienced" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 3).

Recommendation. Upper management positions within the SEMA should be manned with personnel selected from agencies within or outside the state who have experience in areas related to emergency management. Although the Indiana SEMA executive director, Patrick Ralston, assumed his position as executive director of the

Indiana SEMA on 28 February 1997, the day the flood occurred, he was able to effectively organize activities to provide aid to disaster victims. Mr. Ralston was familiar with the organizations within Indiana that participate in emergency management and was therefore better prepared to assume the role as executive director.

Analysis. "Since 1990, the State Emergency Management Agency, the Department of Fire and Building Services (DFBS) and the Public Safety Training Institute (PSTI) have been joined to coordinate activities which protect the public peace, health and safety and preserve the lives and property of the people of the state of Indiana" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 4). This organization provided emergency managers of the state with a wide array of expertise in preparing for the flood, as well as any other emergency with which the state might contend.

Recommendation. Combine as many organizations within the state that have similar functions. As a cost-saving measure and a measure to cultivate shared standard operating procedures statewide this merging of organizations would more easily communicate and employ emergency management policies and procedures. In the event of an emergency, any part of the associated agencies could provide personnel and resources to respond to or aid with recovery activities.

Analysis. Another organization contributing to efficient preparedness is the Indiana Emergency Response Commission (IERC) chaired by Patrick Ralston. "The IERC consists of 13 members appointed by the Governor who represent local and state government, industry and the public. The commission is chaired by the director of the State Emergency Management Agency and vice-chaired by the commissioner of the

Indiana Department of Environmental Management... The IERC is charged with maintaining [industrial chemical] records, as well as with supervising and coordinating the activities of Indiana's 92 local emergency planning committees.

"The local emergency planning committees are composed of elected state and local officials; representatives from law enforcement, emergency management, firefighting, emergency medical services, health, local environmental management, hospital management, transportation, broadcast and print media; community groups; and owners and operators of facilities [using or storing industrial chemicals]" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 6). The combination of local emergency planning committees and IERC add to the breadth of preparedness in emergency management state wide. Although there was no evidence of chemical spills occurring during the flood of February 1997, the expertise in managing the effects of these chemicals was called upon in many of the public service announcements produced by the FEMA/Indiana SEMA team. Furthermore, bi-monthly meetings of the IERC ensured that the resources used during the response and recovery phases of the flood were available and ready to be employed where needed.

Recommendation. Because federal and state laws governing the manufacture, transportation, use and sales of industrial chemicals and HAZMAT, a state-wide commission such as the Indiana Emergency Response Commission (IERC) could provide a conduit for all facets of society from citizens, to businesses, to government, to express concerns and share ideas . It also ensures that information concerning regulatory or statutory requirements are disseminated to all concerned sectors of society. The IERC

provides just another resource for the SEMA to utilize in the event of a HAZMAT spill or emergency event associated with industrial chemicals. Indiana local emergency planning committees provide methods for upward and downward flow of information and data from industry that better prepares the SEMA for events with potential HAZMAT circumstances.

Analysis. "Indiana's Disaster Preparedness Improvement Grant provides technical and financial assistance to prepare for, respond to, recover from or mitigate against hazards. Historically, the Disaster Preparedness Improvement Grant has been used to assist in the development of emergency action plans (EAP) and mitigation planning (both pre- and post-disaster mitigation plans), recovery plans and training to respond to disasters" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 12). This had aided many counties in developing their EAPs. The EAPs of five counties were submitted as examples and approved by FEMA. The existence of the Disaster Preparedness Improvement Grant provided Indiana with the funds required to ensure that counties were prepared with the expertise and required resources to manage the flood.

"The Human Services Branch [of the SEMA] administers the Individual and Family Grant Program as provided by federal law under presidential declared disasters. The Individual and Family Grant Program works closely with the American Red Cross, local unmet needs committees, the National Flood Insurance Program, and various local government agencies" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 12). This branch works directly

with the Response and Recovery directorate of FEMA to ensure all qualified victims of disasters are provided with the necessary means to return to normalcy as soon as possible.

Recommendation. Organizing divisions of the SEMA that assume responsibilities over FEMA funded programs ensure that state and local level emergency managers are familiar with programs available for disaster assistance. This familiarity provides adept employment of those programs early in the recovery phase to provide aid to disaster victims.

Analysis. The organization of the Indiana SEMA, having offices designed to represent the businesses, governments and citizens of Indiana, provided for the exceptional preparedness, response, and recovery, as well mitigated measures associated with the flood.

Recommendation. Designate a planning branch to ensure Emergency Operations Plans are periodically reviewed for currency, completeness and compliance with state and federal policies or guidance. Designate a training branch to translate regulatory and statutory requirements, as well as recommendations for emergency operations. This organization provides focused training programs to suit the specific needs of counties or regions within the state. Training is the key to ensure all emergency managers are familiar with guidelines established at the state and federal levels. Moreover, training provides a conduit for innovations at local levels to be incorporated into state or event federal programs. Tailor-made training programs for counties that encounter similar emergency situations provide exceptional cost-saving measures. These tailor made programs can also provide training for several local EMAs simultaneously maximizing the incorporation of state and federal policies or guidance. This can maximize exercises

with multiple county EMAs to save money and provide an excellent opportunity to incorporate the latest training methodology or new equipment training.

Functions

The functions of the Indiana SEMA before, during and after the flood brought the necessary resources to bear on the response and recovery efforts associated with the 1997 flood. The lack of data indicating mitigating measures emplaced after the flood in response to issues submitted by victims indicates one of two things: either the data provided by the Indiana SEMA do not indicate that the issues were addressed; or the SEMA (local or state) was and is barred from emplacing mitigating measures due to the fiscal constraints of the Indiana SEMA annual budget. These issues are discussed in detail below.

Analysis. The Planning Branch of the SEMA "has the primary task of researching, developing, authoring and publishing plans which are within its responsibility for local jurisdictions, the state of Indiana and the federal government. In addition, many Emergency Operations Plans are reviewed by the Planning Branch each year. The intent of the review is not to determine the plan's effectiveness but rather consistency with relative standards" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 15). The Emergency Operations Plan for local emergency managers is reviewed periodically by the Planning Branch. Although not regulatory in nature, this review did ensure that the affected counties had a current Emergency Operations Plan that was consistent with emergency management standards set forth by FEMA and other national emergency management agencies.

The Training Branch of the SEMA's Preparedness Division is home to the Emergency Management Academy. This academy's primary responsibility is to provide a comprehensive training program based on the needs of the state in the areas of mitigation, preparedness, response, and recovery. The academy presents emergency management courses for state and local emergency management personnel. Federal monies enabled academy personnel to teach classes with minimal cost to the state and local jurisdictions. The academy has established strategic locations throughout the state to present these training programs. This reduces cost while increasing training opportunities. This aggressive training program prepared emergency managers across the state for the actions required when the flood occurred. The programs provided up-to-date training on state and federal level procedures, communications, and awareness of the state and federal programs emergency managers have at their disposal to serve the communities they protect. Through this active training program, led by the SEMA creating cost saving measures for the local emergency managers, the emergency management system as a whole was better prepared for the flood of 1997.

The Exercise Branch manages the exercise compliance program. This program provides guidance and helps local jurisdictions to secure necessary resources for the conduct of a simulated emergency event. Compliance by the county usually ensures that state funds (matching what the county provides for emergency management programs) are disbursed for the next fiscal year. Nowhere in the Indiana Code (applicable portions included in chapter 1) was compliance with state policy on periodic requirements for exercises indicated as regulatory or statutory. The 95 percent compliance in 1997 indicates a very effective and active exercise program. County emergency management

agencies having just completed an exercise are much better prepared for disaster events, especially when they conduct them in accordance with state policies and guidelines. The Indiana SEMA displayed evidence of this active exercise program during the response and recovery phase of the operation.

Recommendation. The PSTI provides emergency managers within the state with a cost effective method to train emergency managers, not only SEMA personnel but also anyone in the state that participates in emergency management activities, safety, environmental, HAZMAT, and many other functions. The PSTI provides for standardization training with the most up-to-date techniques, technology, and policies associated with emergency management. Limited funding for the construction and operation of a similar organization may only allow a state to develop an active state organized training program versus a fixed training institute. The potential exists for several states to contribute emergency management funds to operate and maintain a regional PSTI where all states within the region send emergency management personnel for training. This PSTI regional facility could be organized much in the same way FEMA has organized states into ten regions.

Analysis. The EOC of the Indiana SEMA provided timely response to flood victims through maximizing advances in information technology and resource lists provided by sixty-five counties and local emergency management agencies. The EOC compiles a complete list of resources available for emergency management (submitted by county emergency managers) using a customized software program which allows local emergency managers to communicate electronically with the state EOC. Dial-in procedures for SEMA laptop computer users were developed allowing, remote access to

the agency's server. Digital photos submitted using the software program facilitated the assessment of the disaster, allowing the state to quickly ascertain the gravity of the event.

Recommendation. SEMAs must stay abreast of the latest advances in technology. Funding must be targeted on long-term solutions to problems in information management. Periodic reviews of existing systems with available technologies ensure that SEMAs can maximize emergency management funding. Laptops used by local EMAs provided all emergency managers with common communications throughout the state. The Global Positioning System ensured the accurate location of the most severely affected areas. This allowed resources to be focused on those areas needing critical aid in the most responsive manner.

Common software (as well as hardware which is not as critical to success) facilitates the process of developing databases that hold state-wide resources made available during emergency operations. States must conduct periodic reviews of databases to ensure information is current and complete. A common database with names and contact numbers of personnel to man disaster assistance centers or provide other aspects of assistance must be maintained at the state level. Accuracy of these databases is a joint responsibility of the SEMA and local EMAs. This process is facilitated through input of data using a common software program available to all emergency managers within the state. Savings are achieved by using existing software (developed by other SEMA) or obtaining software used by FEMA. Common software throughout the state ensures rapid and accurate transmission of data, facilitating assessment processes and many other functions of the SEMA. Advanced technologies used by the Indiana SEMA provided methods for transmission of photographic images of

disaster events, allowing rapid assessment. Images can be sent to regional and national FEMA offices as a part of local and state assessments, thus reducing the labor and resource intensive assessment process.

Analysis. A Mobile Command Center (MCC) was used during the Ohio River flood. The MCC links in through various communications domains to the FEMA MCC. Multiple communications methods ensured that the state EOC was linked with local EOCs, the JIC, and the RICs during the recovery phase. The MCC was an effective tool aiding continued recovery operations during inclement weather following the flood. The communications package ensured that information flowed uninterrupted to the state EOC throughout the recovery phase.

The case study indicates several other functions of the Indiana SEMA that contributed to efficient management of the flood. Six days after the flood occurred the Indiana SEMA had organized and deployed a JIC with FEMA officials in the state. The JIC served as the hub for information management, using the various media available to the SEMA to get word out to flood victims and people wanting to provide aid. The JIC was located in one of the affected counties, providing rapid transmission of information from local managers and victim comments alike. The Recovery Information Centers activated in eleven counties provided flood victims with a central location to obtain complete information about benefits, as well as technical advice about recovery. Both the JIC and the first four RICs were activated the day of federal declaration, indicating a standard procedure for JIC and RIC operations. The ability of the SEMA to staff these centers with the right people who possessed the knowledge required by flood victims is an indicator of a thorough and well developed state response plan. Lists of equipment,

names of volunteers with proper training, locations for establishing centers, and available materials for day-to-day operations must have been developed previously, kept current and exercised in the recent past. The RICs ensured that recovery efforts were focused on the needs of the people through interaction with victims and aid providers.

Recommendation. Command and control of response and recovery efforts is key to successful emergency management. The Indiana SEMA effectively used the MCC during the 1997 flood. SEMAs must design the MCC to provide interface with the FEMA MCC to facilitate uninterrupted communication between local, state, and federal emergency managers. By establishing standard operating procedures for organizations such as the JIC and RIC used by FEMA and the Indiana SEMA, including required personnel and equipment to be used in these facilities, SEMAs are better prepared to rapidly activate these types of facilities. Additionally, SEMAs must identify, preferably before a disaster occurs, key locations for placement of the JIC and RICs so emergency managers know where to report if and when called upon to provide disaster relief.

Analysis. Perhaps the most significant function of the Indiana SEMA during the 1997 flood was the employment of the many aid programs. As the case study indicates not all of the programs were initiated when the response and recovery efforts first started. Many of the programs were brought into the recovery effort based on the needs of the victims. Moreover, several programs were expanded (the emergency food stamp program) when the SEMA recognized a lack of responsiveness to the needs of victims. Finally, even programs that had no precedent, but that have foundation in the Indiana State Code, were employed to ease the suffering of Indiana citizens. The governor's executive order which delayed the requirement for filing state taxes for flood victims

relieved a great burden from victims struggling to get their lives back in order. Seventy-seven counties in Indiana are emergency assistance counties. Emergency Assistance is an incentive program providing federal money to local jurisdictions when emergency planning, training, and exercise requirements are met. The federal dollars ensure compliance with state emergency management policies not otherwise enforced or implemented by state law. As a part of the EMA program, coordinators in Indiana were "provided with laptop computers and trained to use the global positioning system. As a result, assessment and response capabilities [were] increased tremendously. Coordinators sent damage photos, map locations and narrative statements directly to the state EOC from their cars as they traveled through the flooded areas" (State Emergency Management Agency/Department of Fire and Building Services/Public Safety Training Institute 1997, 14).

Recommendation. SEMAs must become familiar with federally funded emergency management and mitigation programs during "quiet" periods. Federal funding reduces the burden on state and local EMAs and increases compliance with state or federally generated requirements. Familiarity must include a thorough knowledge of limitations and capabilities of agencies (such as the National Guard or other DoD elements) that may come into the state in the event of an emergency.

Indiana's Disaster Preparedness Improvement Grant provides local emergency managers with monetary resources that may be required to develop Emergency Action Plans (EAP). Grants could be disbursed on an incentive basis. As local EMAs meet a series of gates throughout the year, grant money is awarded to continue programs for future activities in the coming year. A system, such as the EAP, where county

emergency management systems receive resources from FEMA for excellence in emergency action planning, is another incentive based program that may stimulate increased action at local levels. Providing information to local EMAs about the EAP allows those EMAs access to federal funding and additional resources for training exercises and equipment upgrades. Incentive based programs such as the EAP encourage local jurisdictions to comply with state and federal emergency management guidelines for the development and maintenance of emergency response plans.

Analysis. The only area in the "functions" part of the Indiana SEMA that appeared from the data to be deficient was mitigation. The case study indicates two significant issues submitted to the SEMA by flood victims: rebuilding in the floodplain and the restrictions on aid for victims who do this; and funds available for relocation of homes and businesses out of the floodplain. There are no data indicating that mitigation measures were emplaced to reduce the effects of these issues. Public education, especially for those people who have homes and/or businesses in floodplains, had not provided many victims with regulations governing rebuilding until after they had begun rebuilding and in many cases spent considerable money out of pocket. Floodplain data can be compiled at the state level. Computer imaging, simulations and other techniques provide accurate data on the effects of flood-waters in identified floodplains. With mitigation funds, especially those provided through FEMA mitigation programs, it is not unfeasible to ensure that all potentially affected people could receive information about the hazards of living or owning a business in the floodplain. The incentive this knowledge brings may result in more people purchasing flood insurance from the

National Flood Insurance Program, thus reducing recovery costs at local, state and federal levels.

The lack of relocation funds, while a deficiency, is a function of fiscal restraints on emergency management funds. Emergency management is expensive and getting more so all the time. Even if funding was held in a state slush fund or category of emergency management funds, the potential costs associated with relocating homes and businesses out of floodplains would easily exceed the total costs of all other disaster aid programs.

Recommendation. Assign a single point of contact or group of personnel with the specific responsibility to record, categorize and catalogue issues, complaints, or shortfalls encountered during the response to and recovery from emergency events. Memories fade and the data collected as the issues are raised provide detailed and accurate information which can be used in forming policies or procedures, or to modify the organization, function or authority of the SEMA for future events. These changes, or mitigating measures, reduce the chance of recurrence and provide data for the justification of funding during state level policy development.

Historical data and surveys can accurately identify floodplains and, therefore, structures and property in floodplains. Public education programs targeted at home and business owners living or working in floodplain areas increase awareness of restrictions on state and federal aid and reduce the cost of the education campaign. By providing educational material only to those living or working in floodplain areas, the total cost is far less than a county wide education program.

Authority

Analysis. Unfortunately the data provided by the Indiana SEMA for this event do not indicate much about the authority the SEMA exercised over resources within or outside the state. For example, nowhere in the disaster case study is the National Guard mentioned. Usually in disaster events the National Guard plays a significant role in the response and recovery efforts of the SEMA. This lack of data does not indicate that Indiana does not exercise authority over agencies within the state. The efficiency of the recovery effort indicates a thoroughly developed and well understood disaster response plan by emergency managers and disaster assistance providers state-wide.

Two events do demonstrate the authority of the SEMA over resources during emergency situations. Part of the recovery effort brought tax specialists to RICs to aid flood victims in preparing taxes and claiming exemptions and deductions associated with disaster relief programs. These tax specialists were brought into RICs when the Indiana SEMA established contracts with tax service providers within the state. The authority to lay contracts using state funds provided a key element of relief to victims in the recovery effort.

As chapter 2 indicates, the Indiana State Code that the SEMA may make, amend, and rescind rules and other directives when performing emergency management duties. The Indiana SEMA did amend rules when the state assumed an additional 12.5 percent of the cost share normally assumed by local jurisdictions. The SEMA did this to lessen the burden on the local governments and ensure that timely aid was provided to flood victims.

The Indiana SEMA, through efficient functions and organization, was able to provide citizens of the thirteen counties affected by the Ohio River flood of 1997 timely and thorough disaster assistance. With the mitigation deficiency as the exception, the Indiana SEMA demonstrated a high level of efficiency in its preparations for, and response and recovery from the flood.

Recommendation. Within state laws power must be granted to the governor or the director of emergency management to alter state policies if required by the nature of the emergency. Such was the case when Governor O'Bannon extended the deadline for filing state taxes and changed the cost sharing program for local jurisdictions (the state assumed the full 25 percent of the cost share, relieving the burden on local governments).

Case Study No. 2: American Eagle Flight 4184 Air Crash

Case Study Review

The following accounting of the event is composed of extracts from the After Action Report completed by the Indiana SEMA Operations Division in February 1995.

At approximately 1524 hours Central Daylight Time (CDT) on 31 October 1994, an American Eagle ATR-72 propjet en route from Indianapolis to Chicago entered a holding pattern at 10,000 feet because gusting winds forced a change of runways at O'Hare International Airport. At 1556 hours (CDT) the aircraft was cleared to descend to 8,000 feet, but was asked to hold for 10 more minutes. The pilot responded with a "Thank you." That was the last radio contact with the aircraft. At 1559 hours (CDT) radar contact with the plane was lost at 4,000 feet. The crash was first reported to the Lincoln Township Fire Department at 1600 hours (CDT) by [a resident near the crash site].

Response began immediately. However, due to the remote location of the crash site and the muddy conditions of the field in which the site was located, the Lincoln Township Fire Department did not arrive at the actual crash site until 1615 hours (CDT). Hampered by the mud and poor weather conditions, the fire chief immediately established a forward command post at the crash site and ordered a search for survivors. At approximately 1640 hours (CDT) the fire chief radioed the fire station and reported no survivors. At approximately 1645 hours (CDT) the fire chief removed his personnel from the crash site and established a perimeter for security.

The first arriving response agency was the Lincoln Township Fire Department, arriving at 1615 hours (CDT). The fire chief immediately initiated the Incident Command System (ICS) and assumed command. The second responding agency was the Indiana State Police, arriving at approximately 1620 hours (CDT). The Lincoln Township Fire Department established a staging area northeast of the crash site and a command headquarters at the fire station. Additional responding agencies were directed to one of these locations. Upon arrival, the State Police assisted Lincoln Township with search and security and started their investigation. Without a need for fire suppression and with no survivors, the fire chief turned over command to the State Police at approximately 1830 hours (CDT). Although a large portion of the ground was covered by aviation fuel, there was no fire so fire suppression was not needed. However, fire fighters and equipment were on standby at the crash site until the fuel was no longer a threat.

The Newton County Highway Department was called in by the Newton County Sheriff's Department to assist with roadblocks and barriers; however, at approximately 2300 (CDT), the highway department was asked to start construction of an access road into the crash site. This project was completed at around 0600 hours (CDT) the following morning. At about the same time a second staging area was established at the North Newton Junior/Senior High School. In addition, the command center was moved to the high school. The gymnasium was designated by the Newton County Coroner as the temporary mortuary. This proved to be a very unpopular decision; however, with Newton County being largely agricultural, the high school was the only facility large enough to accommodate the expanded command center and provide room for a temporary mortuary. The following morning, 1 November 1994, during a meeting with federal, state and local authorities, it was decided to move the morgue to a more suitable location. The SEMA made a request to the Military Department of Indiana for the use of one of its facilities. The armory located in Remington, Indiana, in Jasper County was designated as the temporary morgue, and Military Department of Indiana offered the use of Company C, 738th Support Battalion personnel to be used in support of the mortuary operation.

In the first few hours following the crash, the ICS, as established by the Lincoln Township Fire Department, worked very well. As additional agencies started to arrive, command became very confusing. For the first 36 to 48 hours agencies went about their business in a very professional manner, but the work was independent of any solid command structure, which often resulted in duplication of efforts. By the end of the second day, everyone had settled into a unified command structure that worked well. Establishing a command structure at the temporary morgue was extremely difficult. The majority of the personnel working at the morgue had never worked under the ICS and many had never heard of such a system. By the second day, an informal command system started to take shape and continued to strengthen as time went by. This informal system when charted looked very much like a traditional ICS.

The Lincoln Township Fire Department in Thayer proved to be too small for all personnel arriving into the area. Command and control functions vied for space and telephone access with media representatives. The solution was to move operations to the largest facility in northern Newton County, the North Newton Junior/Senior High School. The school only had two working pay phones. Its main lines, meanwhile, were swamped with inquiries from as far away as Scotland. Cellular phones were useless. The demand for air time far exceeded the capability of the cells in the area. This pointed out the need for emergency response agencies to have backup communications systems prior to any given emergency. The State Police communications trailer and its dedicated 800 MHz system allowed public safety officials to talk to each other.

A public information station was established at the Radisson Hotel in Merrillville, where the National Transportation Safety Board has set up its headquarters. Due to the station's location approximately 25 miles from the crash site and 55 miles from the morgue, it was very difficult for the agency spokesperson to coordinate news releases at the site. A JIC was established at the Remington Armory.

Run-off from rain moved some aviation fuel to a nearby ditch and booming and containment had to be executed. All HAZMAT operations to this point were accomplished by the Lincoln Township Fire Department. Decontamination of personnel and equipment at the crash site was established and operated by Lincoln Township. However, when the crash site was declared a biohazard area, PWI Environmental, Inc. (a private HAZMAT clean up company), State Fire Marshal personnel, Emergency Medical Services personnel and numerous other agencies provided assistance.

The crash of flight 4184 was the second crash to be declared a "Biological Hazard Area." The first arriving respondents, in their haste to locate survivors, failed to take proper precautions when entering the crash site. Soon after the arrival, a biohazard perimeter was established with one common entry and exit point. Personnel entering the site were required to dress in biohazard protective clothing in one area, and decontaminate both themselves and their equipment in a separate area by the entry point. The biohazard operation required a tremendous amount of coordination between the numerous volunteers that worked the crash site. Responding agencies quickly depleted their supply of biohazard suits, boots, gloves and other related items.

Early in the morgue operation it became apparent that morgue personnel were becoming overwhelmed by the large amounts of biological waste being produced. Contaminated clothing was being placed in uncontrolled piles on the floor and on tables when bio-containers were full. Contaminated clothing was also being worn into "clean" zones spreading contamination. SEMA field staff, while performing numerous other duties, attempted to assist with biological control. However, it was quickly realized that this type of assistance was beyond SEMA capabilities, and outside help was required. SEMA requested the assistance of the Northeastern Indiana/Allen County Medical Response Team. Upon arrival, the Medical Response Team immediately conducted an assessment

of the situation, established containment and control procedures, educated the morgue staff, and enforced control procedures using a firm but tactful approach, winning the willful cooperation of all agencies and personnel. At the mortuary, medical support came from a variety of sources. The armory was the base location of Company C, 738th Forward Support Battalion (Medical), Indiana National Guard. Eighty members of the this battalion and numerous Emergency Medical Services volunteers from around the state performed support duties such as tracking body parts, working in cold storage areas (refrigerated trucks), assisting with x-ray, and assisting with biohazard containment. The Indiana Association of Coroners, the Indiana Funeral Directors Association and the Indiana Association of Dentists recruited their association personnel not only from Indiana but from neighboring states as well.

Local hospitals were alerted to the air crash and were told to be prepared to receive survivors. After the search was completed and no survivors were found all hospitals were told to stand down. Area hospitals continued to support the operation by supplying equipment and protective clothing for the mortuary.

Indiana State Police provided security at the crash site and the morgue. State Police also provided a command trailer that was used as a command post at the crash site. The Newton County Sheriff's Department assisted the State Police with roadblocks and site security. With limited resources remaining, the sheriff's department called upon the Department of Natural Resources' Law Enforcement Division to assist with several police calls when the sheriff's department had no officers available. In addition to assisting the sheriff's department, Department of Natural Resources provided personnel and equipment for the recovery of human remains, personal effects and aircraft parts. While the armory at Remington was being converted into a temporary mortuary, the town marshal worked closely with SEMA to provide security until the morgue was open and started to receive remains.

For the first time professional massage therapists from the American Massage Therapists Association were utilized by the SEMA during the recovery operation. The massage therapy proved to be a great stress reliever for everyone that used the service. Established radio networks between law enforcement agencies, fire departments and emergency medical services was well established and worked effectively. However, due to the increased demand of radio and telephone traffic, the Indiana State Police issued 800 MHz hand held radios to agencies and individuals needing additional radios. Additional telephone lines from the Northwestern Indiana Telephone Company were brought into the Indiana State Police command trailer. Cell phones and pagers did not work in the area of the crash site. The Salvation Army feeding stations communicated via UHF commercial radio, alpha-numeric paging, cellular phone, and HF amateur radio, with HF amateur radio as the primary communication system.

Initially, requests for supplies and equipment came from every direction, resulting in duplication of several orders and a lot of confusion on the part of SEMA's Emergency Operations Center staff who were trying to accommodate these requests. To rectify this problem, SEMA assumed the position of logistical

and resource support for the coroner, who was operating from the mortuary in Remington. SEMA and Emergency Medical Services personnel worked hand-in-hand to establish one focal point for all requests.

In all, 213 funeral directors from Indiana, 57 funeral directors from Illinois, 57 students of mortuary science, seven coroners and numerous deputy coroners, as well as several members of the FBI, Armed Forces Institute of Pathology, Dental Association, State Police, and a number of volunteers worked in the mortuary over the two week period of recovery operations (Indiana State Emergency Management Agency 1998, 1-18)

Case Study Analysis

Organization

In order to analyze the response and recovery aspects of this incident a brief explanation of the Incident Command System is required.

The complexity of incident management, coupled with the growing need for multi-agency and multi-functional involvement on incidents, has increased the need for a single standard incident management system that can be used by all emergency responsible personnel. The principles of the ICS enable state and local emergency response agencies to utilize common terminology, span of control, organizational flexibility, personnel accountability, comprehensive resource management, unified command and incident action plans. Designating a standardized emergency management system to remedy problems associated with confusion in emergency situations took several years. The ICS was developed by an interagency task force working in a cooperative local, state, and federal interagency effort called FIRESCOPE (Firefighting Resources of California Organized for Potential Emergencies).

The organization of the ICS is built around five major management activities:

Command - Sets objectives and priorities and has overall responsibility at the incident or event.

Operations - Conducts tactical operations to carry out the plan, develops the tactical objectives, and directs all resources.

Planning - Develops the action plan to accomplish the objectives, collects and evaluates information, and maintains resources status.

Logistics - Provides support to meet incident needs and provides resources and all other services needed to support the incident.

Finance/Administration - Monitors costs related to the incident and provides accounting procurement time recording cost analysis.

A basic ICS operating guideline is that the person at the top of the organization is responsible until the authority is delegated to another person. Thus, on smaller situations where additional persons are not required, the Incident Commander will directly manage all aspects of the incident organization. (New York State Emergency Management Office 1998, 1-5).

Analysis. The only reference to any aspect of the organizational structure of the Indiana SEMA in this case study is the state EOC. The aspects of the EOC are best summarized under the functions section.

Recommendation. The ICS is an excellent technique that can be used by emergency managers at all levels. The ICS divides responsibilities into four functional areas. It provides for first responders to establish a structure for response and recovery operations within which all personnel, equipment and resources can be added. The key to successful ICS function is command. Command should be the first position established and the transfer of command should be conducted only when and if necessary. If transfer or delegation of command becomes necessary it should be done after the individual assuming command has been fully briefed on the situation. The briefing should include what agencies or organizations have been notified or activated, what assets or resources have been requested, which ones are necessary for the response or recovery (if an

assessment has been completed), and what assets, organizations, or resources are inbound.

ICS takes advantage of the first responder having greatest exposure to the event. This provides time for local, state, or federal authorities to assess the situation and assume command when conditions allow.

ICS procedures must be fundamental for full time emergency personnel from emergency medical technicians to the Director of the State Emergency Management Agency. ICS should provide the framework for emergency assets as they conduct training and exercises.

Within the ICS organization one key operation is the reception and integration of personnel, equipment and other resources into the response or recovery effort. As organizations are contacted to provide support and supplies and equipment arrive in the area of operations, they must flow into a single point or designated points for briefing and integration. This integration point must be operational full time until the end of the recovery phase. Not only will resources be targeted to areas in critical need, but funding or reimbursement procedures can also be initiated at the integration site.

Functions

Analysis. Initiation of the ICS at the first responder level indicates familiarity with state emergency management procedures and recognition that the event may require assets beyond the local authority capabilities. Properly executed, the ICS provides an automatic structure for command, operations and logistics; aspects of the American Eagle crash that were somewhat deficient. During the response phase incident command switched at least twice in the first twelve hours after the crash. While ICS was a familiar

concept to some of responders, the execution was not. This confusion could be a critical shortfall when a time critical situation occurs. The presence of casualties, fire, HAZMAT, explosives, or a rapidly changing situation requires a thorough knowledge with ICS by a core of responders.

The influx of personnel to the crash site and morgue occurred rapidly and with little integration or organization. As additional agencies and personnel arrived in the area, their assimilation into the recovery effort was hindered by the lack of a single reception point to brief and integrate new arrivals. Adding to the confusion posed by standard response and recovery organization was the arrival of many organizations required by the nature of the event. There was no program for the reception, inbrief, and integration of new resources and personnel into the recovery effort.

The Indiana SEMA assumed control of logistics operations for the recovery effort in its ICS role. Many supply requests were redundant, having been submitted by several members of various organizations. As the recovery effort continued the supply and requisition process was streamlined, thus reducing redundancy and increasing responsiveness.

Terrain and space management is a big concern in response and recovery operations. This is especially true when the incident occurs in rural areas away from readily available structures with built-in communications and power. It is difficult at best to foresee all assets that may be required in an emergency. Many organizations sought building space when the use of tentage may have been more appropriate for some organizations and activities.

Recommendation. The functions of the operations officer within the ICS organization (especially the function of providing locations for arriving resources) are critical. Resources must be located where they are most responsive or accessible. Positioning or organizing personnel, equipment and supplies may also have to be integrated into the operation's security or biohazard plan.

Analysis. The Indiana SEMA recognized the shortfalls in redundant communications in the area of operations. Improvisations eventually overcame these shortfalls and the improvised methods were incorporated into the SEMA communications plan. The remote location of the crash site dictated the need for a mobile command center. The State Police command trailer served in this capacity. Although not ideally equipped for the mass requests for phone and fax traffic, the command trailer helped to coordinate actions throughout the area of operations.

The Indiana SEMA established a Joint Information Center while simultaneously, 55 miles away, the National Transportation Safety Board operated a public information center. Perhaps this was a function of space near the crash site, but the two similar facilities appeared to have created redundancy. This redundancy in effort does not necessarily mean redundancy in information. In fact conflicting information can be generated by these redundant facilities, potentially creating very difficult situations for the recovery effort. The redundancy also increases manpower requirements and demands on communications.

First responders were not aware or did not recognize the biohazards associated with this type of emergency. Early in the response sequence, emergency personnel attempted to establish biohazard procedures. Required biohazard supplies were not ,

however, readily available for recovery efforts. The Indiana SEMA recognized that aspects of the situation exceeded its capabilities and brought in the Northwestern Indiana/Allen County Medical Response Team. This type of specialist is a critical element at any incident with potential biohazard aspects. While the biohazard operations aspects of the recovery effort were being managed by the Medical Response Team, American Airlines hired PWI Environmental Inc., a private organization, to conduct the clean up. Maintaining a HAZMAT team as a state asset is fundamental for emergency management operations. HAZMAT events occur almost everyday, but HAZMAT situations as large as the one associated with Flight 4184 exceed the capability of a small state HAZMAT contingent. PWI Environmental and other such organizations are key assets to the response and especially the recovery phase of incidents with potential HAZMAT consequences.

Security operations at the various recovery locations exceeded the abilities of the local and state law enforcement agencies. Normal police business continued over the weeks of recovery operations. The enlistment of the support of the Department of Natural Resources was key to allowing normal police business to continue. Without this critical asset the police forces may have been unable to maintain the tight security required by the accident.

Recommendation. Effective communications to coordinate all activities involved in the response and recovery effort are critical to success. Part of the preparedness function of a SEMA should be to train emergency managers on all forms of communications equipment. Effective communications are robust and redundant; robust enough to meet the potential needs of all entities involved in response and recovery and

redundant enough so that if a primary system fails or becomes saturated, at least one back-up system is operational and available. The only true way to ensure this is to exercise communications procedures during training exercises.

Dissemination of information is a difficult but necessary task when all efforts are focused on servicing disaster victims. The release of information should be monitored by one agency to prevent possible discrepancies. Often information is sensitive in nature (names of victims, for example). More than one agency releasing information puts undue stress on public affairs aspects of emergency management.

Maintaining comprehensive lists of potential assets for responding to emergencies has already been mentioned. One possibility for enhancing disaster aid activities is to gain and maintain a list of out of state assets that can provide specific support functions in emergency management. A potential cost saving technique is for states (or jurisdictions within a state) to support assets through variable funding programs based on demographics and potential frequency of use. The services of assets such as a HAZMAT cleanup specialist would be available for all states in a joint use agreement.

Analysis. Massage therapists used in the recovery effort is a non-traditional element that may not be appropriate for every situation. However, many methods designed to counter incident induced stress and fatigue only serve to facilitate recovery efforts. Crisis counseling agencies were provided from federal, state, local, and private groups that proved to be a key factor in the timeliness of the recovery operation.

Recommendation. The use of massage therapy during recovery operations following the American Eagle crash was but one of many methods available to mitigate stress associated with the long arduous work during response and recovery operations.

Crisis counseling is an important facet of disaster response and recovery. Emergency managers must recognize the potential need for crisis counseling and stress management for workers as well as victims. Two simple techniques that can effectively mitigate the effects of stress and other psychological aspects of disaster relief work are the enforcement of work shifts and a sleep plan. Work shift length must vary with the intensity of effort. Regardless of the nature of event, all relief workers must work only for designated periods. Down time helps to counter the effects of stress and distances workers from what are sometimes very disturbing situations. A sleep plan is a tool used to ensure all relief workers receive the required rest to maintain efficiency. Lack of sleep can contribute to mistakes in physical performance and decision making. Disaster situations demand maximum capabilities and can be unforgiving of poor decisions. Supervisors must establish and enforce sleep plans to maximize the efficiency of the work force.

Authority

Analysis. Unfortunately, this case study does not indicate the direct authority the Indiana SEMA exercised over any agency or organization that responded to or aided in recovery operations in this event. The organization chart in chapter 2 indicates that the Indiana SEMA has a Technical Hazards Division with a HAZMAT Branch. These organizations utilized outside resources as needed to recover from this event and did not exercise authority for tasking any person, organization, or agency.

Recommendation. The weeks following the crash of American Eagle Flight 4184 required law enforcement officials to provide security for several activities and areas. The time and manpower required for these security operations exceeded the capabilities

of local law enforcement agencies. In this instance the normal workload of the county sheriff department was assumed by the Department of Natural Resources. The data provided by the Indiana SEMA do not provide information on the agreement that allowed this overlap of forces. The end effect was that there was never a break in security or a drop in law enforcement presence in the county. Situations where a continuous requirement for law enforcement presence is required may place excessive demands on local units. The SEMA, therefore, must have within its authority the ability to task forces within the state to provide law enforcement capabilities and relieve some of the work load on disaster recovery activities or normal law enforcement requirements.

CHAPTER 5

NORTH DAKOTA: ANALYSIS AND RECOMMENDATIONS

North Dakota. Case Study No. 1: Winter Storm, North Dakota, January and February 1997.

Case Study Review

The following information is an extract from the North Dakota Division of Emergency Management 1997 *After Action Report*.

North Dakota was hit by a series of severe winter storms starting in late December 1996 through January 1997. The fifth blizzard in less than a month produced heavy snowfall, high winds and dangerously cold temperatures. The North Dakota Emergency Management issued its first snow disaster Situation Report on 10 January 1997 describing the severe conditions. The snowfall had blocked state, county, city and township roads, restricting access to emergency services and delivery of heating fuels.

North Dakota's two interstate highways closed for four days, leaving truckers and motorists stranded at truck stops and struggling to find available hotel space. Railway service was also disrupted. Farmers and ranchers, unable to supply feed and water to their livestock, began to experience livestock losses. The magnitude of the disaster was such that Governor Schafer declared a snow disaster on 11 January 1997 and requested that the President issue a disaster declaration for the state. The next day, President Clinton responded with Presidential Major Disaster Declaration FEMA-1157-DR-ND.

Governor Schafer expanded the activities of the State EOC to respond to local government requests for assistance with snow removal efforts and fuel emergencies. The governor also ordered the ND National Guard to help local governments and the North Dakota Department of Transportation with snow removal efforts. In addition, he asked the U.S. Department of Agriculture Secretary to approve appropriate agri-industry assistance programs. Within a few days of receiving the request, the U.S. Department of Agriculture approved the Emergency Feed Agriculture Snow Emergency Task Force of 14 January 1997 to address farmers' and ranchers' needs.

The state EOC was staffed around the clock by state and National Guard employees as they addressed the logistics of transporting snow-removal equipment from larger cities to rural areas. Emergency Preparedness Liaison Officers representing the U.S. Navy, U.S. Army, and U.S. Air Force reported to the state EOC to support these disaster operations.

FEMA's snow removal policy came under review for its applicability to the blizzards that impacted North and South Dakota. Representatives of North

Dakota Emergency Management and State DOT met in Pierre, SD, with officials from South Dakota and FEMA to review the policy. The original policy allowed reimbursement for workers to clear roads the width of their roadbeds. That policy met the needs of southern and eastern states [North and South Carolina, for example] where winter conditions are prolonged and wind gusts would easily blow snow onto snow cuts on the roadway, again blocking the road. In order to prevent such road closures, snow removal crews in North and South Dakota had to push back the snow from the sides of the roadway, [beyond the roadbed]. The policy was revised to allow reimbursement for the more complete method of snow removal.

Crews from the Grand Forks and Minot Air Force bases and private contractors joined the National Guard, the North Dakota Department of Transportation and local workers in around-the-clock snow removal efforts. Just as the efforts of this ad hoc team were being realized, a seventh blizzard entered the state on 22 January 1997. Concerns continued to mount for livestock and dairy producers.

While disaster response work continued at the state EOC, a joint State/Federal Disaster Field Office opened in Bismarck on 24 January 1997. Representatives of North Dakota Emergency Management, North Dakota State Department of Transportation and FEMA conducted applicant briefings for local agencies throughout the state explaining the snow removal policy and eligibility for reimbursement.

On 31 January Governor Schafer announced that the incident period for FEMA-1157-DR-ND began on 3 January and ended on 31 January 1997. Such designation meant snow removal work that occurred during that time frame would be eligible for federal and state reimbursement. Storm-related problems continued throughout late January and early February. The state EOC continued to receive reports of buildings collapsing under the weight of the snow into the month of February. Twenty teams of state and federal public assistance inspectors participated in training on developing Damage Survey Reports. These reports detailed costs and scope of work for eligible snow removal projects. By 6 February, inspectors were in the field, working from the Bismarck Disaster Field Office or satellite offices.

The National Guard ended its 24-hour staffing of the EOC on 10 February 1997. The North Dakota State Department of Transportation extended its use of contractors in the Valley City District through 15 February as contractor crews also worked for the Grand Forks and Fargo Districts to assist North Dakota State Department of Transportation crews in pushing back snow. Efforts to secure federal assistance also continued. Governor Schafer requested and received a Governor's Certification from the Small Business Administration for low interest loans for businesses that suffered economic losses because of the disaster. The Governor also asked the USDA Secretary for a Secretarial Declaration of structural and production losses.

The National Guard concluded its extensive snow removal efforts on 20 February 1997. As equipment was transported to the National Guard's

organizational maintenance shops, the focus of soldiers' efforts shifted toward maintenance and repair of equipment (Friez and Donahue 1997, 1-10)

Case Study Analysis

Organization

Analysis. The North Dakota SEMA preparedness branch has officers who establish liaison with DoD agencies residing within the state. In the event of emergencies or disasters Emergency Preparedness Liaison Officers from the various DoD agencies report to the state EOC to coordinate assistance. In this way the North Dakota SEMA can rapidly bring to bear many resources on a disaster situation. The liaison with the DoD agencies can ensure these elements participate in training and exercises conducted by the SEMA. Likewise, any emergency training or exercises conducted at DoD facilities in the state can include North Dakota SEMA personnel.

Recommendation. The preparedness division of the KDEM should obtain names and numbers of DoD agencies residing in the state. Since there are several DoD elements within the State of Kansas, the KDEM must develop contacts with each facility to ensure that DoD resources can respond to situations anywhere in the state. Through training activities the KDEM could cultivate a relationship with DoD agencies, facilitating disaster response and recovery efforts. Department of Defense facilities conduct frequent emergency exercises. Involvement of local personnel and resources is often encouraged. A state sponsored training and exercise program could ensure emergency management policies and procedures are shared between local, state and DoD elements.

Analysis. The state EOC was staffed around the clock throughout the entire period of this disaster event. North Dakota National Guard personnel to operating the

EOC, facilitated coordination of all disaster recovery efforts and interface with FEMA and local jurisdictions. The manpower requirement for SEMA personnel in the EOC was reduced and the communications specialties within the National Guard were maximized in the EOC.

Recommendation. Since the state EOC of Kansas lies inside the National Guard Headquarters building, manning the EOC with Guardsmen may be achieved with little difficulty. Identifying National Guard personnel who drill at the state headquarters or in National Guard Armories nearby would facilitate contacting them in the event of an emergency. Those soldiers with communications skills are ideal for operating communications equipment within the EOC. Furthermore, training these Guardsmen have received enables them to troubleshoot problems when a communications system fails. Manning the EOC with part time Guardsmen may also be a cost-saving measure. Activating a soldier in the event of a disaster to man and operate the EOC is much cheaper than keeping one person employed full time as a member of the KDEM.

Functions

Analysis. The North Dakota SEMA monitored the severity of the winter storms in the EOC with information from the National Weather Service. Simultaneously, local emergency managers provided information concerning the effects of the storms on local citizens. The initial indication of trouble was the interruption of services to people in rural communities. Using the data in the situation report, Governor Schafer requested a presidential declaration of disaster. The federal declaration was issued three days after the initial situation report issued by the SEMA. FEMA utilizes a standardized format for situation reports which facilitates assessment processes. This format also used by local

and state emergency managers ensures a common framework for assessment up to the federal level.

Recommendation. All county and jurisdictional emergency managers within Kansas must utilize FEMA approved situation report formats and procedures. This ensures that data submitted by local emergency managers is not reformatted at a state or federal level before submission and facilitates rapid transmission of data.

Analysis. The two interstate highways in North Dakota were closed for four days due to blizzard conditions. Many commercial carriers and travelers found themselves unable to move through affected areas.

Recommendation. All emergency management agencies design programs to address the needs of citizens of the county or state which they serve. In cases such as this, others may also be victims, and the SEMA must also be prepared to address the needs of people who do not reside within the state. Shelter and food for such victims must be considered when developing emergency response plans.

Analysis. The extreme winter conditions affected people as well as livestock during this disaster event. The North Dakota SEMA advised the governor of the disaster relief options available. The Agriculture Industry Assistance Program helped to lessen the effect on the North Dakota dairy and beef industries.

Recommendation. Kansas, like North Dakota, is an agriculture oriented state. Many of the citizens of Kansas and businesses residing in the state are potentially at risk to the same types of threats to industry as other similar states. Federally funded programs can become available to agriculture industries affected by disaster events. Some part of

the KDEM must be familiar with these programs and be able to discuss the restrictions and allowances of federal money.

Analysis. Upon recognition of the severity of the blizzard conditions and the affect on North Dakota citizens, the North Dakota SEMA quickly coordinated contracts to aid with snow removal operations. Even when employing the resources of the North Dakota State Department of Transportation, the North Dakota National Guard and other DoD agencies in the state, the snow removal requirements exceeded the capabilities, thus necessitating the contractor support.

Recommendation. Part of employing contract support of any kind in disaster recovery operations is being thoroughly aware of the capabilities and limitations of the contract and contractor. The KDEM must be aware of the legal and fiscal boundaries that have been placed on contract support for emergency management. Likewise, information concerning costs and capabilities must be obtained and maintained by the KDEM. The use of contract support can reduce the full time strength of state assets with emergency management responsibilities. Furthermore, competition between potential contractors cultivates better service and more flexible contract terms. Potential contractors must be familiar with disaster relief operations, and ongoing liaison activities are required to facilitate the employment of the contracted asset.

Analysis. The severe effects of the winter storm demanded quick action by emergency workers. In order to ensure citizens and businesses received aid in the most expeditious manner, the North Dakota SEMA formed and briefed twenty teams of public assistance inspectors. These teams dispersed into the disaster areas to assess damage and initiate aid to victims. Some of the personnel forming the teams were federal employees

from the Operations Support Directorate of FEMA. Other teams were formed from North Dakota SEMA personnel, and still others from volunteer organizations. The value of volunteer organizations has been mentioned in the analysis of previous case studies. The point here is that volunteer organizations can provide a myriad support to SEMAs. Within Kansas many volunteer organizations exist and personnel within those organizations represent a cross section of Kansas society, familiar with much of the industry within the state. Maximizing the talents of people within volunteer organizations is key to successful emergency management. Volunteer organizations should be considered for training and exercises conducted by the KDEM.

Analysis. Governor Schafer requested a Secretarial Declaration of structural and production loss from the USDA Secretary. On 31 January 1997 the Governor also established a restrictive time period for reimbursable disaster aid activities.

Recommendation. The Governor requested federal assistance to address specific needs of the victims of this disaster. As the cost of disaster relief rises states must limit requests for assistance to exactly what is needed. Recovery operations can continue long after the initial affects of a disaster event. By limiting the time period for reimbursable activities, the Governor ensured that the state and local governments were able to meet the 25 percent cost share required for federal funding. Notice of Interest submissions must be monitored within the SEMA to ensure that emergency management budgetary limits are not exceeded. This decision must be, of course, balanced with the magnitude of recovery operations to ensure that all victims receive necessary aid. The ICS has already been explained. One function of ICS is financial management. This aspect

becomes very critical to emergency management as funds must be made available for future events, as well as the one in which a SEMA is currently responding.

Authority

Analysis. Governor Schafer exercised authority over the North Dakota National Guard, bringing Guardsmen on State Active Duty early in the response phase and maintaining some soldiers in that status until operations were complete.

Recommendation. By activating the National Guard as soon as the state declaration was issued on 10 January 1997, the Governor ensured that National Guard unit headquarters assumed command of Guard assets and maintained command and control of those assets throughout recovery operations. This is an important point and cannot be stressed strongly enough. When National Guard assets are brought into disaster relief efforts, it is important that senior National Guard officers receive generalized guidance from the SEMA and that the National Guard commanding unit assign tasks to those units best suited for specific response or recovery operations. When on 20 February 1997 the National Guard concluded its snow removal efforts, much was still required of the unit personnel placed on State Active Duty. Maintenance of equipment is labor intensive and cannot be accomplished entirely during regularly scheduled unit assembly periods. Soldiers must remain on State Active Duty until all equipment and personnel have been returned to pre-disaster notification status. National Guard units have a twofold mission: support the Governor in situations such as disaster recovery, deployment in the event of war. Many disaster relief efforts place equipment and personnel into less than ideal readiness conditions. These resources must be allotted

sufficient time to restore equipment to readiness levels so they can support both missions in the future.

Analysis. Upon receipt of the federal disaster declaration many National Guard personnel manned the state EOC continuously until recovery operations were complete.

Recommendation. Utilizing National Guard personnel in the state EOC allowed the limited manpower organic to the North Dakota SEMA to focus efforts on tasks not applicable to normal National Guard activities. National Guard soldiers receive pay when placed on State Active Duty; however, this pay can be substantially lower than that required for full time SEMA personnel. A cost analysis for EOC and other emergency activities utilizing National Guard personnel must be completed to ensure cost savings are actually present. This can best be accomplished during exercises where National Guard personnel perform duties expected of them during actual emergencies. All costs cannot be identified during exercises, but the analysis can better prepare emergency management budgets and justification of those budgets for future operations.

North Dakota. Case Study No. 2: Spring Floods, February - March 1997.

Although this event presents sufficient data for analysis in all areas of the North Dakota Division of Emergency Management organization, functions and authority, the analysis focuses on one area that has not been addressed thoroughly in other case studies. That focus is mitigation. The case study review concentrates on the actions of the North Dakota Division of Emergency Management and other emergency management agencies emplaced after the flood that were designed to mitigate the effects of future disasters. The section below reviews mitigation measures employed by North Dakota prior to the first effects of the flood. The effects of the flood were, however, far greater than anyone

expected. Therefore, the most important lessons learned from this event were captured by a document prepared by the Planning, Operations and Mitigation Section of the North Dakota Division of Emergency Management.

Case Study Review

Long before flood-waters made North Dakota a focal point of national media attention, emergency management officials had developed and put into action extensive preparation plans. They based their efforts on analyses of a flood threat by staffs from the National Weather Service, U.S Army Corps of Engineers, State Water Commission and other water management groups. Local, state and federal partners participated in flood preparedness activities and meetings throughout the fall of 1996 and winter of 1997. Measures taken by these partners included identifying and prioritizing key facilities and structures in harm's way; relocation and/or elevation of structures; site specific planning; abandonment and/or elevation of transportation routes and facilities; temporary diking measures; and water storage measures.

Throughout the winter of 1997, North Dakota Emergency Management conducted its State Flood Coordination Center meetings in Devil's Lake. For the past five years, this closed-basin lake had flooded, gradually encroaching on the city of Devil's Lake and its 8,000 residents. In preparation for a sixth year of flooding, the State Flood Coordination Center meeting participants outlined their preparation plans and listed damages likely to occur at various elevations of Devils Lake.

In early February, Governor Schafer requested technical assistance for flood preparedness measures from the Omaha District of the United States Army Corps of Engineers. This assistance included help clearing the James River channel and installing channel blocks downstream of Jamestown, and on both ends of the Oxbow area, located in the southeast portion of the city.

Staffs for the Governor's Office and North Dakota Emergency Management also prepared and distributed articles on flood preparedness to such publications as the North Dakota League of Cities "City Scan," the North Dakota REC Magazine, North Dakota Water Magazine, North Dakota Peace Officers Association monthly newsletter, North Dakota Fire Chiefs Association and the Agriculture Network Service.

The city of Grand Forks was arguably one of the best-prepared Red River Valley cities for flooding. The city had prepared by supplementing the existing levee system with 3.5 million sandbags. Despite these measures and those of the state, Grand Forks was one of the most devastated of all flood ravaged areas. Seventy five percent of Grand Forks homes were touched by flood-waters that spread out as much as three miles into the city. Approximately 16,000 residents had flood damaged homes, resulting in almost \$50 million loss in the residential tax base.

By early May flood-waters had resided somewhat and recovery efforts were in full swing. As a result of flood waters over 150,000 cattle drowned or starved due to farmers' having lost access to grazing areas. More than 30,000 North Dakotans had reported property damages, and eight people had died in flood related deaths. Cost for National Guard operations alone was approximately \$4 million.

FEMA Director James Lee Witt and Governor Schafer began mitigation meetings for North Dakota flood victims to help prepare for future floods. North Dakota Emergency Management and FEMA hazard mitigation staffs organized applicant briefings and workshops for local officials, which were held throughout the state on 20-28 May 1997 (Friez and Donahue 1997, 11-34).

Case Study Analysis

Organization

Analysis. The North Dakota Division of Emergency Management organization facilitated operations during this disaster event through a clear delineation of tasks and responsibilities of emergency management functions. Each organization within the division coordinates both within and outside of the division through well-developed and familiar channels.

Recommendation. Other SEMAs can find exceptional examples of organization successes in the North Dakota Division of Emergency Management. There is a clear line from organization through function and authority for each branch within the division. This simple delineation facilitates efficient operation and serves as an example for other SEMAs.

Functions

Analysis. During the response and recovery phases of the flood many agencies conducted flights for a myriad of purposes, many of which were conducted as a result of requests from various organizations involved in response, assessment, recovery, and VIP

activities. No single entity organized these flights to ensure that the proper resource was utilized for the task.

Recommendation. The North Dakota Aeronautics Commission suggested using a dispatcher to coordinate all aviation operations for responders. The Civil Air Patrol provides this resource in accordance with the North Dakota State and Regional Disaster Airlift Plan. A single point for air operations should be established and incorporated into the Kansas Emergency Operations Plan as a function of the operations branch. The agency assuming this responsibility must not only be familiar with the capabilities and limitations (including legal aspects of air operations) of organizations providing aerial services to response and recovery efforts, but also be able to communicate with appropriate agencies.

Analysis. During the flood, the Bank of North Dakota, the nation's only state-owned bank, provided economic stability relief programs to businesses and workers affected by the flood.

Recommendation. The Bank of North Dakota provides specialized loan and grant programs designed to return economic stability to disaster affected regions. Similar institutions, or the creation of a similar state-owned bank, in Kansas could provide much needed aid for economic stabilization early in disaster recovery efforts.

Analysis. After Action Reports by the North Dakota Division of Emergency Management and the North Dakota League of Cities indicated that plans established in the State Emergency Operations Plan (SEOP) for addressing unsolicited donations were not fully developed. A more complete plan is currently under development which tasks

the Division of Emergency Management with responsibility to coordinate support to local governments for emergency donations distribution.

Recommendation. Media attention can provide the necessary catalyst for the influx of donations in support of disaster recovery operations. As donations come into the affected areas they must be catalogued and distributed efficiently to areas and people in most critical need. Many donors request receipts of donations for tax purposes. This additional administrative activity can be incorporated into normal operations where incoming donations are received and recorded. This task can be daunting if the amount of donated material and resources is large. Many non-profit organizations deal with mass donations daily and can be of great service to emergency managers in the event of a disaster.

Analysis. Dissemination of public information, especially that which informs citizens of potential dangers is critical. Many excellent examples of public information releases are available in nation-wide after action reports of past disasters.

Recommendation. Develop a guide with samples of needed information to be distributed during disaster operations and maintain this guide in a facility such as a Joint Information Center.

Analysis. Much of the mitigation success associated with the 1997 flood resulted from the consultation of the North Dakota Division of Emergency Management with the North Dakota Geological Survey. As a result of this success the Geological Survey was tasked in the SEOP to provide technical engineering and public works support to local governments, as well as help interpret flood forecasting with state, local and federal authorities.

Recommendation. Geological Survey data can provide necessary information to aid in identification of potential hazard areas for floods and many other naturally occurring disasters. Coordination between National Weather Service representatives and Geologists from the Geological Survey can provide up to date predictions of trouble spots□ allowing emergency managers to focus resources on those areas.

Analysis. During the recovery phase of the operation, the Department of Human Services found itself confronted with a shortage of adult day care service providers. Many of the people employed by adult care agencies were also victims of the flood and were unable to reach those care facilities or the homes of patients. Personnel on duty found themselves wanting to return to their homes to help with removing belongings or bolstering flood barriers□ but were unable to leave without alternate shift personnel.

Recommendation. Emergency managers must consider the effect of a disaster on adult care facilities and the like. Alternative manning procedures must be established with lists of qualified personnel or the means of transporting assigned personnel to designated areas. One consideration may be to provide temporary housing and associated services for providers at facilities and evacuating dependent people from residences until normal services can be reinstated.

Analysis. "The North Dakota Risk Management Division of the Office of Management and Budget helped the North Dakota National Guard with right-of-entry agreements for debris removal" (Friez and Donahue 1997, 32). This enabled National Guard assets to help flood victims to assess and begin recovery operations. Debris removal tasks were reviewed for right-of-entry requirements before National Guard assets departed for the mission.

Recommendation. The Kansas Emergency Operations Plan must have examples of memorandums of understanding which allow personnel from various organizations to remove debris and conduct other activities within privately owned establishments. As mission requests are received by the KDEM they must be screened for right-of-entry requirements and, if necessary, a memorandum generated and signed by required parties.

Authority

The original North Dakota SEOP included numerous tasks and responsibilities for organizations and agencies within North Dakota in the event of an emergency. In the wake of the 1997 flood disaster the Emergency Management Agency conducted a study of the tasks and responsibilities of those agencies to identify shortfalls in tasking authority included in the SEOP. The results of this study are included in the analysis and recommendations portion of this case study.

Analysis. Much of the loss involved with this disaster included that associated with agriculture industries. The U.S. and North Dakota Departments of Agriculture were both actively involved in response and recovery operations during the flood. However, new tasks for the North Dakota Department of Agriculture were identified.

Recommendation. "The North Dakota Department of Agriculture will coordinate and disseminate information regarding disaster and emergency agriculture relief programs. Additionally the State Veterinarian proposed the development of a plan for animal health emergencies" such as were experienced during the flood (Friez and Donahue 1997, 35). As Kansas has a predominantly agriculturally based economy the Kansas Department of Agriculture should be involved with development and dissemination of disaster relief programs designed specifically for agriculture businesses.

Assigning this task to the Department of Agriculture ensures that all aspects of disaster relief programs are targeted to the proper customer and reduces the workload of the KDEM.

Analysis. Many North Dakotan agencies established a "one-stop" shop in Grand Forks for transient merchants and contractor licensing. This facility increased the pace with which these transient merchants and contractors could begin services to disaster victims. This "one-stop" concept was the first of its kind for emergency operations in North Dakota. As a result the actions of all agencies involved was codified into a portion of the SEOP. One of the lead agencies involved with the development of the "one-stop" concept was the North Dakota Attorney General.

Recommendation. "The [North Dakota] Attorney General's Office will provide assistance to local governments with contractor issues during emergency and disaster situations" (Friez and Donahue 1997, 33). The authority of the Attorney General ensures that contractor and merchant licensing in response to disasters is a rapid process to ensure required services are provided to disaster victims. Moreover, oversight by the Attorney General ensures that contracts are legal and that contractors are legitimate with disaster victims' best interest in mind. Including the Kansas Attorney General in the Kansas Emergency Operations Plan would provide the same services to the citizens of Kansas.

Analysis. "Because of flood damage to the Grand Forks County Courthouse and area law offices, the [North Dakota] Supreme Court adopted an administrative order that granted emergency deadlines of extensions and change in location of court" (Friez and Donahue 1997, 36).

Recommendation. Task the Chief Justice in the Emergency Operations Plan to assure continued operation of the Kansas court system during emergency and disaster operations. This may entail granting extensions and identifying alternate locations for legal proceedings.

Analysis. The recovery efforts during the 1997 flood taxed all state agencies in manpower, often overextending personnel, causing fatigue, injury and excessive overtime costs incorporated into the overall recovery costs.

Recommendation. The North Dakota Department of Corrections and Rehabilitation was tasked in the SEOP revision to provide law enforcement and search and rescue support resources. Likewise, Kansas' extensive corrections facility personnel provide a large number of personnel who may be able to provide law enforcement services when state and local agencies are over extended.

Analysis. Most of the structures damaged during the flood included extensive electrical damage requiring inspection by certified electricians. The scarcity of this resource during recovery operations delayed the repair and re-occupation of many homes and businesses.

Recommendation. The North Dakota State Electrical Board was "tasked to coordinate inspections of premises where damage to electrical equipment had occurred" (Friez and Donahue 1997, 36). Similar state organizations register or certify electricians and therefore maintain lists of qualified electrical inspectors. This resource can be crucial to prompt initiation of repairs.

CHAPTER 6

KANSAS: ANALYSIS AND RECOMMENDATIONS

Kansas. Case Study No. 1: Arkansas River Flooding, Central and Southeastern Kansas, November 1998

Case Study Review

Flooding in the state of Kansas began in October of 1998 with Federal Declaration FEMA-1254-DR-KS, providing federal assistance to flood victims in Kansas. Late October and early November saw record rainfall. As early as 30 October 1998 flooding had affected areas of three counties in Kansas and threatened two additional counties. A storm on 30 October claimed two lives and caused raw sewage to pour into the streets of cities and towns in the affected counties.

The EOC duty officer log indicated some confusion about the term "flood damage." According to the NFIP guidelines, Flood damage cannot be officially declared until flood waters have risen to 18 inches above the first floor (not the basement) of affected structures. The log also indicated that as early as 0421 (CDT) flood damage had occurred in several structures in three counties in Kansas. County emergency managers began voluntary evacuations early on 1 November 1998 and had established evacuation shelters in local school buildings. The situation grew progressively worse throughout the day with EOC sending situation reports through TAG to Governor Graves. Local emergency management situation reports were sent to the executive director of the KDEM, Mr. Gene Krase. Based on these reports Mr. Krase requested the Governor proclaim a state of emergency in four counties.

By 4 November 1998 several counties had sent preliminary damage assessments to the state EOC causing Governor Graves to request representatives from FEMA Region VII to conduct assessments of affected areas for potential federal declaration. Of the 13 counties that had local disaster declarations, only four shared the same declaration format. In fact some declarations, and requests for state declarations were sent to the state EOC in hand-written notes on notebook paper.

On 5 November 1998 Governor Graves declared seven counties state disaster areas. On the same day FEMA Region VII received a letter from the White House indicating the situation in Kansas warranted a federal declaration. The federal declaration was granted for a period of 15 days. Due to extensive damage to structures in eight other counties Gene Krase requested these be added to the federal declaration, bringing the total to fourteen.

Local emergency managers working with the Salvation Army and American Red Cross provided the majority of services to residents of flood affected counties. In fact, the Salvation Army managed all donations and volunteers coming into the response and recovery efforts. By 6 November 1998, eighteen agencies had sent representatives to flood damaged areas to help in recovery efforts. Although the state EOC managed all requests for disaster assistance, each county (as indicated in a press release submitted by the Butler County Emergency Management Office) had designated its own disaster donation points of contact. The news release went further to indicate that money donations should be sent to the American Red Cross Office in El Dorado.

FEMA and the KDEM had formed a JIC in Augusta on 7 November 1998. The JIC provided normal disaster assistance and information to people affected by the flood

and anyone wanting information about the flood recovery operations. Programs offered by FEMA and KDEM representatives in the JIC were temporary housing, individual and family grants, and disaster unemployment assistance. A news release from the JIC provided toll free numbers for disaster victims to apply for aid.

On 10 November 1998, eight additional counties were added to the federal disaster declaration made on 5 November 1998. One additional county was added on 11 November bringing the total number of counties eligible for federal aid under the individual assistance program to twelve. The KDEM requested four additional counties to be added to the federal disaster declaration on 25 November 1998. Under the federal declaration eight counties were eligible for aid under the Public Assistance Program and the citizens of sixteen counties were eligible for aid under the Individual Assistance Program. Several counties affected by the flood following the earlier October storm were again being flooded.

One aspect of this case study not found previously was a difficulty in the application of a portion of the Individual Assistance Program. One part of that program provides for emergency management agencies to pay disaster victims to purchase a used, low cost motor vehicle if all vehicles owned by the victim prior to the flood were destroyed in the event. A part of the process prescribed by federal law (44 CFR) dictates that the state emergency management agency verify ownership of the vehicle owned by the claimant before the event and ensure they award a grant for only one primary vehicle per eligible household. The KDEM normally used the Highway Patrol to verify disaster victim ownership of vehicles they claim to have been damaged. The problem they faced was that Highway Patrol personnel were 30 days behind in working the verification

process. The Highway Patrol had already been paying tremendous overtime to its employees to complete normal workloads, much less this additional function. The concern of the KDEM was that flood victims would not be provided disaster aid, such as the grant for replacement vehicles, in a timely manner. The KDEM requested the Kansas Bureau of Investigations help verify ownership of damaged vehicles. The data do not indicate whether the Kansas Bureau of Investigations did or did not support this request. The point here is that replacement transportation be satisfied quickly.

Case Study Analysis

Organization

Analysis. The KDEM, existing as a subordinate organization to the TAG of Kansas, has direct links to the Kansas National Guard. In fact, the Plans, Operations and Military Support Officer's office is on the same hallway as the state EOC. The benefits of this relationship were evident in the response and recovery phase of this operation. Some of the first elements of state coordinated response were members of the Kansas National Guard who provided generators, debris cleanup, water purification, and transportation services to the response and recovery efforts.

Recommendation. While the first and best response to disaster and emergency events is local emergency agencies such as the city fire and police departments, the National Guard, with armories located throughout the state, can provide some resources not available to local responders. A close relationship between SEMAs and the state National Guard is a key element to effective response plans. SEMAs must strive to limit the administrative requirements to bring National Guard assets into disaster response and recovery efforts. Cost saving aspects of using National Guard personnel has been

mentioned in previous case study analyses. A contrasting point was brought to the attention of the author during a discussion between the author and the KDEM operations officer. While in many instances National Guard personnel can provide timely manpower to disaster operations, the cost to use some National Guard equipment is often greater than contracting for similar resources. SEMAs must be fully aware of the discrepancies in costs and have contingencies to reduce costs through contracting. Further, legal restraints may prevent National Guard personnel and equipment from performing some functions during disaster operations.

Analysis. Decentralized execution of a centralized plan often provides the best approach to situations requiring timely actions. From the data provided, the KDEM appears to maintain centralized planning through a state Emergency Operations Plan. The execution of this plan is carried out in a very decentralized manner with local emergency managers coordinating the bulk of relief activities.

The emergency management process is designed where local assets are brought into an emergency or disaster situation as quickly as possible. When the situation exceeds the capabilities of local assets, outside resources are brought to bear. In Kansas, when a situation exhausts local resources, then and only then does the KDEM act to bring in outside assets. The process in Kansas is for local emergency managers to contact the KDEM when the local emergency manager sees or perceives the situation exceeding his capability to manage the situation with his own assets. The link is from county to state with no entity in between.

Recommendation. Regionalization of counties may provide for more rapid response when the resources of a county are exceeded by a disaster event. A regional

emergency manager who is notified of a developing situation can contact adjacent emergency managers and coordinate required resources more rapidly, perhaps, than a state level agency. FEMA is organized in this manner. The ten FEMA regions facilitate training, policy management, and influx of federal resources into emergency situations that occur within a particular region. States within a region develop close relationships with their FEMA counterparts making this function that much more responsive. In this same way SEMAs can create regions within a state whereby a regional manager, manned and equipped to act as a regional management facility, could coordinate response and recovery efforts to counties within the region. This creates, in effect, greater decentralization and perhaps even greater response.

Functions

Analysis. An EOC duty officer log of 1 November 1998 indicated that much of the initial response activity in counties affected by heavy rains that fell on 30 October began as early as 0410 (CDT) on 1 November. The flurry of activities that followed involved the participation of several local agencies. As counties declared states of emergency and forwarded requests for state declarations of emergency to the state, EOC responders performed several missions on an as needed basis. Local emergency managers assigned tasks to various agencies sometimes without tracking who did what action. This presented a problem to the KDEM, which provides at least some of the reimbursement to these local agencies. The Kansas SEOP includes a procedure where mission numbers are assigned to organizations conducting missions to ensure that all organizations receive reimbursement for their efforts. Assigning mission numbers not only ensures reimbursement but also aids in cataloging activities for after action and

situation reports. As tasks emerged, local emergency managers assigned a resource to the task, in several cases, without a state mission number. As the recovery phase comes to a close, agencies inquire about reimbursement for missions completed. With no record of these missions (i.e., no mission number assigned by the KDEM), some of the agencies did not receive reimbursement. While the protection of citizens is always the first priority to local emergency management agencies, the failure to receive reimbursement for services rendered may cultivate a reluctance to employ certain assets, such as aircraft which tend to be expensive to operate, when that asset is best suited for the task.

Recommendation. Part of the SEOP must include a procedure for local emergency management agencies to assign mission numbers to responders ensuring reimbursement when and if a state or federal declaration is obtained. Missions carried out at the local level must be forwarded to the state EOC as soon as possible to ensure the state tracks those missions. In some cases inappropriate resources were used to carry out tasks. National Guard assets may not be the best resource for a certain task due to the cost or nature of the task. Emergency managers must evaluate the task and available assets to ensure the best possible asset is assigned a task. This is a difficult element in emergency management. Cost saving measures must not impede response and recovery operations, but, at the same time, emergency managers must be aware of limited emergency management budgets. In many cases the state can bring resources to bear on the situation that are best suited for the task, as well as the most cost effective.

Analysis. The case study review indicated that few of the counties requesting or declaring local emergency proclamations utilized the same format. One county, in fact,

requested a state of emergency on a hand- written note faxed to the state EOC. While the end effect was the same, the counties did declare a state of emergency and received KDEM support in response and recovery efforts, the process may be facilitated through a standardized method by which counties apply for or declare a state of emergency. Automation and leveraging the assessment process with technology have been discussed in a previous case study. Members of the KDEM brought to light that the lack of automation, and subsequently standardization, is more than just a function of the cost of technological upgrades. In 1993 Kansas experienced record flooding that affected many counties. County emergency managers were required to submit detailed assessment reports before an official declaration of state disaster could be granted. Since that time the assessment format has been simplified and further facilitated via systems such as e-mail and the Internet. Some county emergency managers in Kansas shy away from state or federal assessment and declaration formats because of the painful lessons of the 1993 flood. Moreover, certain aspects of technological advances are uncomfortable to some local emergency managers. Additionally, the cost to obtain computers with e-mail and Internet capabilities has kept some local agencies from modernizing. While handwritten reports and other correspondence are effective, computer technology lends efficiency to the emergency management process.

Recommendation. Training reduces the intimidation of modern technology. SEMAs must ensure that local emergency managers receive up to date equipment and training that enable them to take advantage of information management technology available. Many counties have a tax base that supports modernization and provides necessary funding, for new equipment procurement and training, matched by state level

emergency management agencies. SEMAs must recognize the discrepancies in demographics throughout the state and strive to ensure an equal distribution of modernization and training funding is provided to all emergency management agencies.

Advanced technologies create efficiencies in more than just response and recovery operations. Distance learning technologies provide states with a conduit for training throughout the disaster life cycle. Distance learning links emergency management agencies at all levels to ensure that the policies and techniques aimed at disaster preparedness are well disseminated and practiced. Training exercises can be conducted whereby emergency management agencies execute portions of the state emergency operations plan and communicate their action via computer networks.

Analysis. The International Conference of Business Officials activated the "Heart of America" damage assessment assistance plan during the response and recovery phases of the flood. This pool of experts provides the KDEM with an excellent resource to facilitate the assessment process. Agencies such as the International Conference of Business Officials are resources that may not be available to local emergency managers but can respond if tasked by state governments.

Recommendation. One key element to efficient response and recovery is damage assessment. While FEMA and the KDEM have simplified the disaster damage assessment format, technical expertise can provide a more detailed and accurate method. Accuracy in initial assessment can ensure that the correct level of response is provided (i.e., state or federal level response) and potential costs of recovery are more accurate. Not every county in Kansas has an engineer organic to its full time staff. Organizations such as the International Conference of Business Officials can provide technical expertise

quickly, but those organizations must be part of the resources available to emergency management agencies before disaster strikes. Developing lists of potential resources and maintaining them has already been mentioned in previous analyses. The KDEM maintains such lists. However, a comprehensive list is not maintained at the state level because the KDEM has indicated that changes at the local level make maintaining such a list difficult.

Recommendation. Disaster response resource lists are crucial to efficient operations at both local and state levels. The technique used by Kansas (maintaining current resource lists at local levels rather than a comprehensive list at the state level) is one method. Aspects of technology (e-mail and linked computer networks) facilitate the maintenance of such a resource list. Once disaster response operations are initiated all available resources must be brought into the response and/or recovery operation as quickly as possible. Perhaps the best method to achieve timely influx of resources is to require local emergency managers to maintain resource lists at the local level and the state to maintain its own list of organizations that require state declarations in order to be activated for disaster response activities. Each level must have immediate access to the other. This access is achieved through linked computer databases. Local emergency managers may not be aware of resources in adjacent counties. Computerized databases existing on a common software domain, and one with which all emergency managers have access, may facilitate bringing applicable resources into response and recovery operations. Regional emergency managers, mentioned elsewhere in this case study analysis, provide an alternative method to resource management.

Analysis. Much of the data obtained to prepare this case study were gleaned from fragmented situation reports completed by the KDEM operations officer and local emergency managers. Even with these situation reports, piecing together the events of this disaster was difficult. In constructing the case study hundreds of documents were reviewed and arranged into chronological order to follow the events of the flood. While the data provided insight into the actions of the KDEM and local emergency management agencies in Kansas, there is no single source or final after action report available.

Recovery activities associated with the flood caused by rains that fell on 30 October 1998 continue as of 28 February 1999 (the date this chapter was completed). The operations officer of the KDEM has indicated her desire to conduct an after action review where a representative from each organization participating in the response and recovery activities reports his organization's procedures, providing necessary information to emergency managers to improve local and state emergency operations plans.

Recommendation. After action reviews and final after action reports must be an integral part of the emergency management process. Mitigation measures are developed through lessons learned. Unless a comprehensive effort to catalogue lessons learned is completed sometime in the response or recovery phase of a disaster operation, much of what was learned will be lost in the passage of time. What is written is not always the complete truth. Activity logs tend to capture significant events; when the pace of operations increases many small but important items fail to appear in activity logs. Seemingly insignificant activities or observations often have huge implications in future events. Two such items, one found in the EOC duty officer log and the other in a letter from Gene Krase to the Kansas Bureau of Investigations, may, if altered to correct

deficiencies they illuminated, increase the efficiency of emergency management for the KDEM in future disaster events. The first item is an entry in the EOC duty officer log at 0515 (CST) on 1 November 1998. A call from a local emergency manager came in to the EOC requesting guidance on the term "flood damage." There were numerous reports of flood-waters in the basements of homes in one South Central Kansas community. The local manager asked if the homes were flood damaged. The EOC reported back to the county emergency manager that in order for the structure to have "flood damage" water must be eighteen inches above the first floor. While this information does not preclude emergency managers from assisting disaster victims whose basements are filled with water but whose first floor are under only seventeen inches of water or less, it does allow the emergency manager or person conducting an assessment to correctly inform victims of potential state and/or federal aid available. The eighteen inch rule must be part of the SEOP and included in training for all potential damage assessment personnel. Perhaps the eighteen inch rule is unrealistic. SEMAs may solicit a change to that rule through FEMA indicating that "flood damage" occurs to structures and property well before flood water reaches 18 inches in the first floor of homes and businesses.

A letter written by Gene Krase to the Kansas Bureau of Investigation requesting support in implementing a function of the Individual Assistance Program (where disaster victims receive funding to purchase a used, low cost automobile to replace vehicles damaged by disasters, after ownership of damaged vehicles is verified) points out another area where mitigation measures may be required. The flood of October and November 1998 required many law enforcement agencies in various capacities taxing the capabilities of those agencies. In fact, the KDEM utilized officers from the Kansas

Department of Corrections in response and recovery activities because local law enforcement agencies could not complete all law enforcement tasks. Utilizing the Kansas Bureau of Investigation to implement certain emergency management functions is an excellent idea that should be written into the SEOP.

Authority

Analysis. The Kansas SEOP identifies many organizations having capabilities that may be useful in disaster events. Activation of local EAPs provides the required authority for tasking the various organizations within the state to provide support for disaster operations. Except in the case described above, where the Highway Patrol was unable to function as the verifying agent for automobile grants causing the KDEM to request support from the Kansas Bureau of Investigation, there was no indication that the authority of the KDEM or local emergency management agencies within Kansas failed to provide necessary assistance to disaster victims. The lack of a comprehensive after action report may have contributed to the lack of such information. The KDEM relationship with the Kansas National Guard ensures that a great deal of resources are available when disaster strikes.

Recommendation. The ability of a SEMA to task any and all organization with resources that can aid in disaster operations is critical to efficiency. FEMA has tasking authority over thirteen federal agencies providing vast amounts of resources to federally declared emergency situations. SEMAs must attempt to align authority over state agencies with those assigned to FEMA. Similar organizations exist within state governments. All of these agencies have at least some resource capable of providing disaster support. The SEOP must reflect this authority, and emergency managers must be

familiar with the required procedures to exercise said authority. Developing working relationships with agencies providing resources to disaster operations is accomplished through training and exercises. In accordance with federal regulations county emergency management agencies are required to conduct annual HAZMAT exercises. Similar exercises must be conducted for other situations likely to be encountered in a state to ensure the authority designated in the SEOP is appropriate and provides the necessary support.

Kansas. Case Study No. 2: Burlington Northern, Santa Fe Train
Derailment, September 1998

Case Study Review

At approximately 0630 (CST) 2 September 1998 portions of a westbound Burlington Northern, Santa Fe (BNSF) train derailed in a rural area in southern Kansas near the Oklahoma border. The KDEM EOC received initial notification of the derailment at approximately 0830 (CST). Ten minutes later the KDEM EOC was contacted by a representative from BNSF, who reported the train derailment as a HAZMAT incident. By 0910 (CST) a situation report was given to Gene Krase of the KDEM. The situation report indicated that residents within a four-mile radius of the accident were being evacuated, and that six box cars were engulfed in flames. The KDEM contacted the Kansas National Guard for rotary wing aviation support at 0940 (CST). Local first responders activated the Incident Command System with the Harper County Sheriff acting as the incident commander. The KDEM contacted BNSF for a manifest to identify potential HAZMAT in the derailment. Two counties affected by the HAZMAT threat (Harper and Barber) submitted local state of emergency declarations to

the KDEM. National Guard aircraft were dispatched to a nearby airfield to facilitate assessment. Aircraft were equipped with fire buckets in the event they would be needed to extinguish the fire.

The BNSF representatives located at the Incident Command Post indicated they wanted to assess the types of chemicals in the derailed boxcars before helicopters were used to extinguish the fire. BNSF faxed a manifest to BNSF HAZMAT representatives at the Incident Command Post and a HAZMAT assessment was completed. Local fire fighting equipment was not employed due to the unknown nature of HAZMAT in derailed boxcars. Once assessment was complete it was determined that local fire fighting equipment was not appropriate for extinguishing the fire. At 1145 (CST) a situation report sent from the incident command post to the KDEM indicated that nine of the 59 rail cars had been de-coupled from the rest of the train. The KDEM requested that the governor declare a state of emergency for Harper and Barber counties. By 1200 (CST) the governor had signed the declaration. Local emergency managers contacted local schools to ensure buses bringing students home were routed around the evacuated area. By 2115 (CST) the fire had been extinguished by National Guard helicopters conducting water bucket missions. BNSF HAZMAT personnel were then able to inspect the wreckage and begin debris removal.

No injuries were sustained in the derailment or subsequent assessment, response, and recovery operations. A KDEM situation report on 8 September 1998, indicated that response and recovery activities during the operation validated all planning and training initiatives. The same situation report indicated that a planning meeting had been

scheduled for 9 September, and reported that a more formal after action review was being scheduled for a future date. There was no indication that such a meeting ever occurred.

Case Study Analysis

Organization

Analysis

Having both the National Guard and the [SEMA] within the same organization provides the potential advantage of being able to ensure that necessary planning and coordination between the two offices takes place. Additionally, this arrangement provides the potential for direct command level communications between the [TAG] and the governor on critical decisions involving military support and civil disaster response. The TAG has an effective command and control structure, although in some states, the Guard is not equipped to easily communicate with law enforcement agencies. Generally, the office of an Adjutant General has strong staff support (National Academy of Public Administration 1997, 102)

Organizational benefits of the relationship between the National Guard and the SEMA have been discussed in previous analyses. There are also disadvantages in this relationship. These include

The possible dilution of interest in emergency management during non-disaster periods, and the possible subordination of the Guard's emergency management responsibilities to its federal mission. In this structural arrangement, the [SEMA's] power and potential advantage hinges on its relationship to the [TAG] and, in turn, on the [TAG's] relationship with the governor. If the latter relationship is good, then the advantages of having the governor's ear accrue. Much will also depend on the individual [TAG's] commitment, knowledge, and interest in emergency management. Some [TAGs] will have considerable interest in this area, while others may prefer to focus more on national defense roles and missions (National Academy of Public Administration 1997, 102).

The National Guard and Army Reserve represent 55 percent of the United States' national defense force structure. Continued reductions in active component force structure place increased demands on the reserve component for national defense. More than ever, National Guard units are activated for missions abroad□ taking away from

their ability to focus on state level emergency management. Therefore, the ability of the National Guard to perform functions in emergency management is decreased proportionately. The challenge to emergency management agencies organized in this manner is apparent and grows increasingly important with time.

Recommendation. States must review the future roles and missions of the National Guard and determine if the National Guard is the appropriate agency to function as the controlling agency of the state's emergency management organization. Beyond recognition of this challenge and the recommendation stated above, it is difficult to prescribe actions that ensure effective organizational structure of emergency management agencies for state governments. Kansas enjoys a mature relationship between the National Guard and the KDEM. The promise of increased reliance of the DoD on reserve component forces demands that this issue be addressed by the State of Kansas as well as other states with a similar organizational arrangement.

Functions

Analysis. The data used to prepare this case study indicated an exemplary emergency management response. The efficiency of the response can be attributed to at least two factors. First, the Kansas SEOP is very detailed in outlining actions required for HAZMAT incidents. Second, counties are required to conduct annual HAZMAT exercises.

Actions of the KDEM and local responders in Harper and Barber counties indicate familiarity with HAZMAT operations. While annual HAZMAT exercises are required by federal regulation, some local emergency management agencies fail to conduct such exercises. The KDEM uses a program whereby counties receive some

emergency management funding once the annual HAZMAT exercise requirement is completed. The location of the derailment (in a rural area 15 miles from the nearest large community) and the familiarity of local emergency management agencies contributed to the efficiency with which this emergency was managed. Had this event occurred in an urban area within a county that had not complied with the annual HAZMAT exercise requirement, the outcome may have been very different.

Recommendation. HAZMAT training and exercises are just one aspect of the training SEMAs and local emergency management agencies should conduct on an annual basis. Limited funding makes training and exercises in all aspects of emergency management difficult. HAZMAT incidents represent potential dangers that warrant the federal requirement. However, certain events are more likely to occur in a particular state or portions of that state than other events. SEMAs must recognize the most likely emergency and disaster events to occur within their state and target emergency management funding on training and exercises that address those events.

Analysis. National Guard aircraft deployed to the incident site equipped with water buckets in the event fire fighting would be required.

Recommendation. Resources deployed to emergency or disaster sites must be prepared for potential contingencies. Equipment requirements vary with the nature of the emergency. Whether contingency equipment lists are located in the SEOP or EAPs for organizations with emergency management functions, they must be developed to meet the potential needs of specific types of events. The decision to deploy with water buckets may have been due to a request from an emergency manager at the scene, or because it is standard procedure for train derailments or HAZMAT incidents, or because they were

needed and not present in a past event. For whatever reason the presence of the water buckets meant that contingency equipment was at the right place at the right time. The point is larger than deploying to train derailments with heliborne water buckets. SEMAs and emergency management organizations can gain insight into contingency equipment requirements through training and exercises. By capturing those requirements and constructing standing operating procedures to be used when activated for an event □ required equipment will be at the right place at the right time.

Standardization has been mentioned in previous case study analyses. The importance of this aspect demands that the point is stressed again and potential areas for standardization are expanded. Experience is one factor in any occupation that cannot be replaced by standardization. Experienced emergency management personnel will not be available every time an emergency situation arises. Therefore, the experience of those few seasoned veterans of emergency management must be codified into standing operating procedures for those times when less experienced personnel are called to action when disaster strikes.

Standardization necessitates simplicity and ease of understanding. When an emergency event occurs any member of the emergency management agency, or any person--if procedures are simplified--should be able to follow a procedure or set of procedures tailored to the specific type of event. The procedures activate the necessary components of response to ensure that the event is dealt with in the most timely manner.

Analysis. A situation report dated 9 September 1998 indicated that the KDEM was seeking confirmation for a formal after action review with the organizations involved in the incident. There was no indication that this after action review actually happened or

that the SEOP or EAPs were changed by lessons learned. The entry in a situation report that response and recovery activities during the operation validated all planning and training initiatives indicates that some member of the KDEM compared what had happened to what was supposed to happen as stated in the SEOP. The KDEM operations officer has indicated her desire to conduct formal after action reviews after each incident. However, subsequent emergency operations have prevented such action.

Recommendation. SEMAs must strive to develop methods by which after action reviews are conducted to ensure lessons learned can be applied to future operations. Perhaps a method is to include in the county or state declaration of emergency a date for an after action review. The span of the declaration can conclude with the review. Organizations involved in emergency management pay particular attention to declaration statements because they carry with them the power of reimbursement. Coincident with the after action review could be a validation of notice of interests. In this way the emergency management agency conducting the after action review would be ensured of a captive audience.

Authority

Analysis. HAZMAT threats are present in any incident involving vehicular accidents. Train tank cars and boxcars, and tractor-trailers carrying HAZMAT present a particularly dangerous potential from the sheer volume of material carried. BNSF HAZMAT personnel provided expertise at the derailment site.

Recommendation. The type of expertise provided by the BNSF HAZMAT team should be made available to future events by incorporating authority over such assets.

Other Findings

One thing that became apparent early in the research process was the lack of standardization at the county level. There are many reasons why discrepancies exist. Population differences in counties of Kansas vary greatly across the state. Counties with large populations enjoy the benefits of a large tax base upon which the emergency management agency can draw resources. Other resources, such as large fire and police departments, ensure that some counties are equipped to manage a wide variety of emergency situations with access to an equally wide variety of equipment. A portion of emergency management funding available to county agencies is obtained through state money disbursed in equal levels to that which a county can generate. Counties with large populations and a large industrial base are able to match larger amounts of state funds. This discrepancy is manifest in lower levels of training and available emergency management equipment, such as communications equipment and computers. There is justification in this unbalanced approach to emergency management funding. Counties with large populations and more industry stand to suffer greater from disasters than smaller counties. However, the disparity in emergency management function grows proportionally to the disparity in funding (among other factors). Eventually, as is the case in some counties of Kansas, the disparity is so great that some counties impede the emergency management process because they are insufficiently trained or equipped. The pace of operations and capabilities of counties in which funding has been high over a long period far exceeds that of less populated counties. Damage assessments, requests for support, and targeted programs may be focused on counties in which information can

be transmitted rapidly. Emergency management budgets are limited, and often the one who speaks first and loudest gets first and gets most.

SEMAAs must remain cognizant of these potential discrepancies and develop programs by which all emergency management agencies within the state stay abreast of developments in techniques, training, and equipment available to the field of emergency management.

The KDEM actively pursues initiatives in emergency management submitted by FEMA, other states, and subordinate organizations within the state. The training and exercise program developed by the KDEM designed to ensure that all county agencies maintain a high level of readiness for potential emergency and disaster events is exemplary. Compliance with state or federally generated guidelines is difficult to enforce unless there is sufficient motivation to comply. Motivation can be achieved through funding or penalties imposed by an enforcing agency. Compliance motivated by funding appears to have greater affect than that associated with penalties. The KDEM exercises limited authority over county level emergency management agencies resulting in a lack of compliance with state-generated policies and guidelines. The method of motivation for compliance in Kansas appears to be disbursement of state level funds. If a county can match only limited levels of state funds, motivation for compliance may also be limited.

Policies and guidelines are designed to increase efficiency through standardization, implementation of mitigating measures, and reduction in redundancy. Failure to comply with established policies is compounded over time. SEMAAs must develop procedures wherein compliance is attained across all subordinate agencies. Policies must therefore be realistic in their scope and applicable to all levels in the state

emergency management system. Perhaps the best method to achieve maximum compliance is through the cultivation of working relationships between state and county level emergency managers. This relationship is best achieved through regular contact and training. When county emergency managers are shown the value of a policy or procedure they are more apt to comply.

CHAPTER 7

CONCLUSIONS

Emergency Management is of great concern to all citizens, but becomes even more so when those citizens are actually faced with an emergency or disaster situation. Improving emergency management is a constant challenge to ensure citizens receive the best possible service from local, state and federal government emergency managers.

Throughout this study there are many recommendations for potential increased efficiency of the KDEM. These suggestions may be applicable to any state level emergency management agency. This chapter summarizes some of the most important findings discovered through research of emergency management data. This chapter provides information concerning the benefits of public education, SEMA training, disaster mitigation, standardization, maximizing technology, FEMA's Project Impact, and ends with suggestions for further research in emergency management.

The Benefits of Public Education

Many of the recommendations in chapters 4, 5, and 6 can be implemented without increased funding. Some, however, demand increased funding from state and federal sources. Disaster preparedness education accomplishes two necessary elements in emergency management. Increased public awareness of the potential for disaster events reduces the cost of response and recovery efforts through programs such as the National Flood Insurance Program and the Disaster Preparedness Improvement Program. Public awareness also enables state lawmakers to implement programs designed to increase tax based funding to aid the state in disaster preparedness. It is incumbent upon the SEMA

to maintain awareness of federally sponsored programs designed to maintain the highest level of efficiency in emergency management. Further, SEMAs must also strive to review and change, when necessary, existing programs within the state in order to meet the changing needs of the society which they protect. In many cases societies are not aware of their emergency management needs. On the other hand, input from society may be the best way to determine specific needs. Therefore, public education must be conducted in a forum where local and state emergency managers provide information about programs designed to benefit the general populace, as well as stimulate comments from the citizens of the community the emergency management system supports.

SEMAs should ensure that public education includes, as a minimum, the following: the Flood Hazard Boundary Map (prepared by FEMA), Flood Insurance Rate Map (also prepared by FEMA), which depicts insurance rates for property in the Flood Hazard Boundary Area, information concerning how emergency public education or information is disseminated during an emergency (through the various forms of media), aspects of the county and state emergency operations plans, and the Base Flood Elevation along flood hazard areas. Flood Hazard Boundary Maps should be available for public dissemination upon request. These maps should also be posted in public facilities such as county courthouses or public libraries.

An effective public education program can reduce response and recovery costs, and better prepare communities for future disasters. FEMA's Project Impact, discussed below, is an additional public education program that provides effective means in preparing communities for disaster events.

SEMA Training

Research material provided much more information than was intended for this study. Vast amount of information concerning lessons learned and techniques for emergency management is available to emergency managers. Several SEMAs and FEMA have developed SEMA training programs based on successful techniques employed during actual disaster operations and exercises. Every SEMA can be contacted via the internet, where training programs and many after action reviews are available. Homeland defense is rapidly growing in importance to DoD agencies. Thus, joint DoD/SEMA training opportunities exist to hone skills needed when disaster strikes. Periodic publications, such as that produced by the National Governors' Association, the National Emergency Management Association and FEMA, provide up to date information about procedures and trends designed to increase the efficiency of emergency management. FEMA's *1997 Strategic Plan* provides realistic goals for national emergency management, which can be tailored to state goals. Moreover, these goals established by FEMA provide guidelines for the formation of organizations, functions and authorities of state and local level emergency managers.

Computer simulations have now been developed to simulate the effects of various emergency and disaster events. These simulations introduce potential situations emergency managers may not have anticipated and provide excellent realistic and cost effective training for emergency managers at all levels. The Garrison Headquarters at Fort Leavenworth, Kansas, is working with a simulation contractor to complete development of disaster simulation training programs. Computer simulations provide SEMAs with an effective tool for practicing emergency management functions at low

costs. SEMAs should cultivate relationships with organizations such as Fort Leavenworth to maximize these types of realistic training opportunities.

Disaster Mitigation

The importance of after action reviews and reports cannot be stressed enough. The cornerstone of mitigation is analysis of actions following an operation, whether actual or simulated. Some emergency management agencies perform better in reviewing what they did, how they did it, and what can be done better. After action review techniques, formats for after action reports, and methods to implement changes designed to rectify deficiencies are available from many SEMA web sites.

In the disaster life cycle the mitigation period occurs from the end of recovery operations until the next response begins. Mitigation must be targeted on the development and implementation of modifications to organizations, functions, and authorities of the SEMA in existence during the previous event. The recovery period, therefore, must include an after action review involving participants from all organizations and agencies involved in the response and recovery efforts. This review must occur as soon as organizations involved in response and recovery efforts are able to complete them. There are several ways to ensure after action reports are completed that capture the relevancy of lessons learned. Sometime during the response and recovery phase the State Coordinating Officer should schedule periodic meetings to discuss the actions of each organization involved in these phases. This is perhaps the most difficult method, but after action reviews conducted in this manner ensure the data are most current and applicable to correct shortfalls identified. Another method involving the state or FEMA is to conduct a formal after action review after recovery operations are

complete. The SEMA or FEMA can require that organizations involved in disaster operations have representation at this meeting. Attendance at the after action review is required for state or federal funding for disaster relief in subsequent disaster or emergency events. The SEMA or FEMA may also provide funding for a representative from the organizations involved in the response and recovery to ensure participation of all interested parties. FEMA and the SEMA may derive a funding agreement where the cost of the after action review is shared between the state and federal programs. FEMA has a vested interest in reducing the cost of disaster aid, thus providing incentive for this type of cost sharing program.

Deficiencies captured during the after action review must be recorded and corrective measures prioritized to meet the most critical shortfalls of aid programs and emergency management functions. Prioritization must be structured in accordance with most critical needs rather than funding or available resources. Emergency management funding must then be targeted towards those most critical needs. Items identified as falling short of available emergency management funds available within a fiscal year must be targeted for funding in subsequent years. Political organizations tend to focus funding on quantity rather quality. That is, the more programs or resources funded by emergency management funding the better the funding process. The influence of voter perception over funding is apparent even in emergency management. Investments in most critical need's areas tend to pay bigger dividends when disaster strikes but may also have adverse affects on voter perceptions during "quiet" times. This is a sensitive issue but emergency managers and lawmakers must maintain focus on the needs of the community.

The comments of the after action review should be captured in after action reports. These reports should be maintained in an historical database and made available to other SEMAs. A good technique is to include a link from the SEMA web page to the historical database, allowing other states to gain knowledge through the study of these past events. After action material is important for local emergency managers as well. Deficiencies identified by local agencies may provide information for the development of state wide programs from which all emergency management agencies will benefit.

Standardization

Several comments concerning standardization are included in chapters 4, 5, and 6. Standardization is the foundation of efficiency. As was revealed in the case study analyses, those SEMAs that were standardized performed more efficiently in many emergency management functions. Standardization applies to organizations, functions and authority. From aligning departments within a SEMA with directorates in FEMA to state wide common software, standardization provides many areas for increased efficiency.

The needs of states vary considerably with geography and demographics. Standardized procedures nation-wide, therefore, are probably not realistic. However, states with commonalties in demographics, state legislature, and SEMA organization can (as some do) achieve standard approaches to emergency management. This provides common correlation between SEMAs and FEMA as well as correlation among emergency managers within the state.

Maximizing Technology

Technology costs. However, investment in current technologies provides much more to emergency managers than faster computers and e-mail. Leveraging technological advances, such as satellite communications, high frequency radios, and digital photography, increases the pace at which emergency functions can be brought to bear on the disaster scene. Communications, assessment procedures, and financial and resource tracking are but a few of the areas that can be better managed through investments into technology available today. Finally, the cost of technology is much less than it was previously. Laptop computers with high-speed modems are just one example of technology investment with huge potential for increased efficiency. Chapters 4, 5, and 6 provide ample examples of advanced technology that gave the SEMA and local emergency managers a wide array of capabilities that increased the efficiency of operations during all phases of disaster and emergency operations.

FEMA's Project Impact

In the Winter 1999 *Disaster Recovery Journal*, FEMA Director James L. Witt talked about the floods that affected Kansas in 1998 to describe Project Impact.

Last week I visited a subdivision of 54 homes in Wichita, Kansas. The families were going through the wreckage of their homes...sifting through the muck and stink left when the Arkansas River overflowed its banks on Nov. 1.

People were pulling out their carpets and putting their water soaked furniture on their curb. It was a terrible scene but one I have witnessed over and over again in the past 5 1/2 years. In fact, it was a scene that had been repeated five times in recent years in this very subdivision.

The sad truth is, this scene should never have taken place much less been repeated. The fact is...we have the opportunity to cut losses...the know-how to reduce risks...and the responsibility to save lives (Witt 1999, 74).

The way to cut losses, reduce risks, and save lives is through a program devised by FEMA called "Project Impact." Project Impact involves what director Witt calls "proactive prevention," which involves helping communities to become "disaster resistant." "In St. Croix in the Virgin Islands, Margaret and Melvin Taylor lost their home in Hurricane Marilyn. When they rebuilt, they built a "disaster resistant" home designed to survive a Category 4 storm like hurricane Hugo, and this year - when Georges struck with wind gusts up to 150 mph, the Taylors were ready, and their house survived undamaged" (Witt 1999, 76). There are other success stories like the Taylors' from all over the U.S. and its territories. The successes point directly back to the efforts of FEMA and SEMAs employing various aspects of Project Impact.

FEMA has identified "35,000 repetitive flood loss properties across the country that have two or more flood loss claims in the past ten years - costing the national flood insurance program over \$200 million a year" (Witt 1999, 76). FEMA has proposed that flood insurance not be available to homeowners who have filed two or more claims that total more than the insurance rates. Restrictions such as the flood insurance policy are the result of skyrocketing costs of rebuilding public and private structures nation-wide.

Project Impact is not just the enactment of policies designed to reduce the cost of disaster aid, it is also an effort to better prepare communities for future disasters. "On Memorial Day weekend, 1984 more than 14 inches of rain fell on Tulsa, Oklahoma, flooding over 6,800 homes and businesses and killing 14 people. Tulsa learned from this tragedy and launched a major storm water management program that is a model for the country and has significantly reduced the flood risks to Tulsa's citizens" (Witt 1999, 76).

The Tulsa storm water management is an example of the partnership between FEMA and local emergency managers designing disaster resistant communities.

Suggested Further Studies

The scope of this thesis was limited by to three characteristics of state emergency management agencies. Organization, function and authority encompass most of the character of a SEMA. Emergency managers, however, are faced with increasingly complex potential disaster situations. Therefore much more time and effort could be spent examining other types of disaster situations and drawing recommendations. One area of particular interest in the field of emergency management gained visibility with the detonation of a homemade bomb in Oklahoma City in 1995. Within hours the subject of terrorism became the most important and least studied aspect of state level emergency management. In the four years since the explosion much has been accomplished in the preparation of SEMAs for this type of threat. Add the additional level of danger that weapons of mass destruction bring to this category of disaster and an entire field of study becomes available to the would-be student of emergency management.

In chapter 2 the three types of SEMA were described, but no explanation as to why there are different forms of SEMA was provided. Why there are different forms of SEMA and whether one form is more efficient or best suited for a particular state may provide further insight into improving SEMA efficiency.

Finally, chapter 1 referred to the rising costs of emergency management. Cost saving measures of any form must be explored to ensure that emergency management remains affordable to states and citizens nation-wide. One potential cost saving measure not studied in this thesis is the Interstate Compact Agreement. Interstate Compacts

provide states access to other states' National Guard assets in times of emergency or as otherwise stipulated in the compact. Compacts maximize the limited resources in the National Guard force structure distributed throughout the country. Interstate Compacts ensure that necessary resources can be focused on disaster response and recovery operations even if the resource does not reside within the state.

The National Academy of Public Administration recommended in its 1997 report on the *Role of the National Guard in Emergency Preparedness and Response* that "The Association of Adjutants General of the U.S. should work with [the National Emergency Management Association], the Governors' Association, the National Conference of State Legislators, and the Council of State Governments to see to the formation in each state of a compact committee that will coordinate with the national legislative task force to secure passage of compact legislation by each state legislatures, thus leading to a national compact, which hopefully would be approved by Congress." (National Academy of Public Administration 1997, 102). Section 611(h) of the Stafford Act instructs FEMA to give assistance in arranging mutual interstate emergency preparedness compacts so state's National Guard have a basis for developing Interstate Compacts.

Reductions in DoD force structure compound the problem of limited National Guard assets within any particular state. Thus, the Interstate Compact is becoming even more critical to ensure disaster aid resources within the National Guard are available when disaster strikes.

Final Comments

The challenge of efficient emergency management is daunting, to say the least. In preparation of this thesis the organization, functions and authorities of many state emergency management agencies above and beyond those described in this document were reviewed for techniques and procedures that could lend efficiency to the Kansas Emergency Management System. The KDEM is by far a leader in the science of emergency management and can offer many valuable points to other state level emergency management agencies. However, there are areas where the KDEM may improve efficiency as described in various recommendations throughout this thesis. The recommendations provided are submitted in the hope that at least some can be adopted by the KDEM as well as other SEMAs, thereby increasing the efficiency with which those agencies meet the challenges of emergency management.

APPENDIX A

NORTH DAKOTA DIVISION OF EMERGENCY MANAGEMENT FUNCTIONS

<u>Coordination and Control</u>	
Functional Coordinator: Governor/Emergency Management	
PURPOSE: To provide for coordination and control of state resource during emergency or disaster operations.	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Provide a React Officer on a 24-hour basis. • Activate State Emergency Operations Center • Activate State Emergency Operations Staff • Activate and maintain liaison with State On-Scene Coordinator • Provide briefings for State Emergency Operations Staff • Coordinate emergency and disaster operations • Access emergency or disaster situation • Prepare and provide situation reports • Assist the Governor in preparation and dissemination of proclamations, executive orders, and directives • Review and utilize, as appropriate, memorandums of understanding between the state and public and private agencies • Prepare hazard mitigation recommendations and submit after-action reports to the SCO • Issue proclamations, executive orders and directives affecting the emergency or disaster situation to facilitate state emergency operations • Receive and process requests for assistance from local government 	<p>Emergency Management</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>All Functions and Task Coordinators</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>All Functional and Task Coordinators</p> <p>Governor</p> <p>Emergency Management</p>

<u>Coordination and Control</u> (Continued)	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Provide technical emergency management assistance to local government to include public assistance, individual assistance, and debris removal • Determine appropriate actions to save lives and property • Ensure liaison with appropriate federal agencies in accordance with the Federal Response Plan • Coordinate and disseminate disaster-related public information • Authorize the issuance of disaster-related public information • Prepare, process and submit requests to the federal government for assistance. • Coordinate utilization of federal government assistance to state and local governments. 	<p>Emergency Management</p> <p>All Functional Coordinators</p> <p>Emergency Management</p> <p>Emergency Management</p> <p>Governor</p> <p>Governor/Emergency Management</p> <p>All Functional Coordinators</p>
<p align="center"><u>Administration</u></p> <p>Functional Coordinator: Emergency Management</p> <p>PURPOSE: To provide a system for managing legal, fiscal, and administrative matters associated with emergency and disaster situations.</p>	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Alert administrative staff • Prepare State Emergency Operations Centers for emergency operations. 	<p>Emergency Management</p> <p>Emergency Management</p>

Administration
(Continued)

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Advise state officials and, where appropriate, local officials on legal actions which they may exercise in handling emergency or disaster situations. 	Attorney General
<ul style="list-style-type: none"> • Represent the state in legal proceedings in which the state is involved as a result of an emergency or disaster 	Attorney General
<ul style="list-style-type: none"> • Advise departments of state and local government on maintenance and security of vital records during an emergency situation 	Management and Budget
<ul style="list-style-type: none"> • Receive, process, and maintain all official documentation of executive decisions and/or actions which effect the emergency or disaster situation 	Secretary of State
<ul style="list-style-type: none"> • Determine or estate the cost of state response and recovery operations 	Emergency Management
<ul style="list-style-type: none"> • Advise the Governor and state departments on requests for utilization of state funds (for response and recovery operations) 	Management and Budget
<ul style="list-style-type: none"> • Conduct audits of state, federal, and local funds utilized during emergency or disaster situations 	Auditor
<ul style="list-style-type: none"> • Support Coordination and Control Office in providing administration-related public information 	Emergency Management
<ul style="list-style-type: none"> • Provide specialized computer services and technical assistance to state departments for response and recovery operations 	Information Services

Health and Medical

Functional Coordinator: Health Department

PURPOSE: To coordinate health, environment, and medical support during an emergency or disaster situation.

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Health, Environmental, and Medical Staff • Provide technical assistance to control communicable diseases • Provide technical assistance to assure safe public and private drinking water supplies and waste water disposal • Identify the need for and manage vector control operations • Manage the use of pesticides in vector control • Monitor emergency food supplies, feeding stations, and public shelters to assure acceptable sanitation standards • Coordinate radiological analysis of the environment • Coordinate emergency medical support resources • Dispatch emergency medical transportation resources • Coordinate emergency morgue facilities • Coordinate health, environmental, and medical-related public information with the Division of Emergency Management • Ensure liaison with appropriate federal agencies 	<p>Health</p> <p>Health</p> <p>Health</p> <p>Health</p> <p>Agriculture</p> <p>Health</p> <p>Emergency Management/Health</p> <p>Health</p> <p>State Radio</p> <p>Health</p> <p>Health</p> <p>Health</p>

Warning

Functional Coordinator: State Radio

PURPOSE: To establish procedures and provide a network for dissemination of emergency disaster warnings.

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none">• Review staff assignments Management	State Radio/Emergency
<ul style="list-style-type: none">• Check readiness of warning system Management	State Radio/Emergency
<ul style="list-style-type: none">• Alert and brief supplemental warning point personnel as needed	State Radio
<ul style="list-style-type: none">• Assist in alerting and activating the state emergency operations staff as requested by Coordination and Control Office	State Radio
<ul style="list-style-type: none">• Upon receipt of a report by state or local law enforcement or by the public of a tornado sighting or touchdown, disseminate the warning	State Radio
<ul style="list-style-type: none">• Upon receipt of a watch or warning message via State Radio, Law Enforcement Teletype, National Weather Service NAWAS telephone, immediately disseminate the appropriate message as follows:<ul style="list-style-type: none">- Search and Rescuer Alert- Checkerboard- Tornado Sighting or Touchdown- Sever Thunderstorm Watch or Warning- Tornado Watch or Warning- Flash Flood Watch or Warning- Winter Storm Watch or Warning- Major Fire or Very High or Extreme Fire Danger Index Alert- High Wind Warning- Accidental Missile Launch Warning	State Radio

<u>Warning</u> (Continued)	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> - Attack Warning - Civil Disorder Alert - Mass Accident/Incident Alert • Disseminate the "All Clear" Message 	State Radio
<p align="center"><u>Communications</u></p> <p>Functional Coordinator: State Radio</p> <p>PURPOSE: To provide a communication network for receiving and transmitting emergency or disaster information among all levels of government.</p>	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Communications Staff • Implement emergency communications procedures to provide communications between the emergency or disaster scene and the State Emergency Operations Center • Provide on-scene emergency or disaster communications based on state and local government requests • Activate sources of supplemental communications to support the existing state radio system • Provide technical communications assistance to local government • Install and maintain state emergency or disaster communications system 	<p>State Radio</p> <p>State Radio</p> <p>State Radio</p> <p>State Radio</p> <p>State Radio</p> <p>Transportation</p>

<u>Communications</u> (Continued)	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Support the Division of Emergency Management in the dissemination of public information • Coordinate and provide communications between the State EOC and the federal government • Implement the Emergency Broadcast System to disseminate emergency public information 	<p>State Radio</p> <p>Emergency Management</p> <p>Emergency Management</p>
<p>Functional Coordinator: Department of Transportation</p> <p>PURPOSE: To provide a coordinated effort for maintenance and emergency repair to facilities and services during an emergency or disaster situation.</p>	
Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Public Works Staff • Coordinate all emergency repair and construction, and debris/snow clearance or removal • Support emergency repair and construction, and debris/snow clearance or removal • Provide technical public works support to local government • Implement emergency highway traffic regulations 	<p>Transportation</p> <p>Transportation</p> <p>Water Commission National Guard Transportation</p> <p>Transportation Water Commission Health</p> <p>Transportation</p>

Public Works
(Continued)

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Provide transportation resource for movement of state and local emergency personnel, supplies, and equipment to include air and ground reconnaissance 	Transportation National Guard Civil Air Patrol Game and Fish Parks & Recreation Water Commission Highway Patrol Aeronautics Commission
<ul style="list-style-type: none"> • Ensure liaison with appropriate federal public works agencies 	Transportation National Guard Water Commission Health
<ul style="list-style-type: none"> • Coordinate private construction resources to respond to emergency or disaster situation 	Transportation Water Commission National Guard Health
<ul style="list-style-type: none"> • Monitor state fuel inventories 	Intergovernmental Assistance
<ul style="list-style-type: none"> • Coordinate Public Works Related Information with the Division of Emergency Management 	Transportation

Damage Assessment

Functional Coordinator: Emergency Management

PURPOSE: To provide a system for assessing private and public property damage which results from an emergency or disaster situations.

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Damage Assessment Staff 	Emergency Management
<ul style="list-style-type: none"> • Coordinate damage assessment 	Emergency Management
<ul style="list-style-type: none"> • Conduct damage assessment of: <ul style="list-style-type: none"> • Private <ul style="list-style-type: none"> - Resident - Business - Agriculture • Private Nonprofit <ul style="list-style-type: none"> - Educational Facilities - Long Term Care Facilities - Emergency Facilities - Utilities (electric, telephone) - Utilities (potable water) - Medical Facilities - Religious Facilities • Public <ul style="list-style-type: none"> - Debris - Land - Debris - Water 	Emergency Management Emergency Management Emergency Management Emergency Management Agriculture Public/Instruction/University System Health Insurance Transportation Public Service Commission Health Health Emergency Management Transportation Water Commission

Damage Assessment
(Continued)

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> - Road Systems - Water Resource Projects - Utilities (potable water, waste water, and solid waste) - Utilities (gas and electric) • Buildings and Equipment <ul style="list-style-type: none"> - Elementary & Secondary Schools - Colleges and Universities - Recreation • State Owned (other than educational or recreational) • Support Coordination and Control Office in providing damage assessment-related public information 	<ul style="list-style-type: none"> Transportation Water Commission Health Transportation Public Service Commission Public Instruction Insurance University System Insurance Parks & Recreation Insurance Game and Fish Forest Service Facility Management Insurance Emergency Management

Public Safety

Functional Coordinator: Highway Patrol

PURPOSE: To provide for the protection of life and property and the maintenance of law and order during emergency or disaster situations.

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Public Safety Staff 	Highway Patrol
<ul style="list-style-type: none"> • Dispatch emergency public safety and rescue resources 	State Radio
<ul style="list-style-type: none"> • Coordinate Public Safety support to local government (to include: law and order, security, and traffic control) 	Highway Patrol
<ul style="list-style-type: none"> • Ensure liaison with appropriate federal Public Safety agencies 	Highway Patrol Crime Bureau Fire Marshal Forest Service
<ul style="list-style-type: none"> • Provide law enforcement support resources 	Highway Patrol Crime Bureau Game and Fish National Guard Parks and Recreation Forest Service
<ul style="list-style-type: none"> • Provide fire support resources: <ul style="list-style-type: none"> - Urban - Rural 	Fire marshal Forest Service Parks & Recreation National Guard Aeronautics Commission
<ul style="list-style-type: none"> • Coordinate state search and rescue support to local government 	Emergency Management
<ul style="list-style-type: none"> • Provide search and rescue support resources 	Civil Air Patrol Highway Patrol Game and Fish Parks & Recreation

<u>Public Safety</u> (Continued)	
Task/Responsibility	Task Coordinator
Provide search and rescue support resources (cont.) <ul style="list-style-type: none"> • Coordinate evacuation support to local government • Provide evacuation support to local government • Provide technical assistance and coordinate support to local governments for victim identification and related record keeping • Support Public Safety by installing emergency signs, regulatory devices and barricades, and identifying various traffic routes • Coordinate public safety-related information with the Division of Emergency Management 	National Guard Forest Service Emergency Management Highway Patrol Public Instruction Transportation Crime Bureau Transportation Highway Patrol

Individual and Family Assistance

Functional Coordinator: Human Services

PURPOSE: To provide emergency or disaster victims with services necessary to meet basic and special human needs.

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Activate Individual and Family Assistance Staff 	Human Services
<ul style="list-style-type: none"> • Ensure liaison with appropriate federal agencies 	Human Services Job Services Public Instruction
<ul style="list-style-type: none"> • Coordinate support to local government for emergency feeding 	Public Instruction
<ul style="list-style-type: none"> • Provide state support resources for emergency feeding 	Public Instruction National Guard
<ul style="list-style-type: none"> • Coordinate support to local government for providing potable water 	Health
<ul style="list-style-type: none"> • Coordinate support to local government for emergency clothing distribution 	Human Services
<ul style="list-style-type: none"> • Coordinate support to local government for providing emergency shelter 	Human Services
<ul style="list-style-type: none"> • Coordinate with federal government when they implement a Temporary Housing Program 	Housing Finance
<ul style="list-style-type: none"> • Ensure liaison with private relief agencies 	Human Services
<ul style="list-style-type: none"> • Provide support to local government in the collection and dissemination of information regarding the conditions and locations of victims 	Emergency Management
<ul style="list-style-type: none"> • Coordinate crisis counseling support 	Human Services
<ul style="list-style-type: none"> • Assure that state and local relief meets the needs of the: <ul style="list-style-type: none"> - Handicapped 	Human Services
<ul style="list-style-type: none"> <ul style="list-style-type: none"> - Elderly 	Human Services

Individual and Family Assistance
(Continued)

Task/Responsibility	Task Coordinator
<ul style="list-style-type: none"> • Respond to complaints and provide public information regarding disaster-related discrimination, fraud, and other consumer abuses • Assist individuals who have not been satisfied with insurance settlements which resulted from an emergency or disaster • Provide taxpayer assistance to victims suffering losses due to emergencies and disasters • Manage the Disaster Applications Centers and coordinate with those agencies that need to be represented • Administer specific disaster relief programs when implemented by the federal government: <ul style="list-style-type: none"> - Emergency Food Stamps - Individual and Family Grant - Disaster Unemployment Assistance • Coordinate individual and family assistance-related public information with the Division of Emergency Management 	<p>Attorney General</p> <p>Insurance</p> <p>Tax</p> <p>Human Services</p> <p>Human Services</p> <p>Emergency Management</p> <p>Job Service</p> <p>Human Services</p>

WORKS CITED

- Beauchesne, Ann M. 1998. *A Governor's Guide to Emergency Management*. Washington D.C.: National Governor's Association.
- California Institute for Federal Policy Research 1998. (No title listed). [web page] (accessed 28 October 1998); available from <http://www.calinst.org>; Internet.
- Emergency Management Procedure Review Task Force 1996. *Final Report*. Leavenworth, KS: Emergency Management Procedure Review Task Force).
- Federal Emergency Management Agency 1998. *About FEMA*. [web page] (accessed 15 October 1998); available from <http://www.fema.gov/about/what.htm>; Internet.
- Federal Emergency Management Agency 1986. *FEMA Instructional Pamphlet 5000.2*. [web page] (accessed 12 October 1998); available from <http://www.ci.malibu.ca.us>; Internet.
- Friez, Douglas C. and Donahue, Kathleen 1997. *North Dakota After Action Report, Historical Perspective*. Bismarck: North Dakota Division of Emergency Management.
- Garfield, K.R. 1997. *San Francisco Earthquake*. [web page](accessed 3 November 1998); available from <http://www.garfield.kr.ut.us>; Internet.
- Grange, MG David L. (USA) and Rodney L Johnson, LTC (USA) 1997. "Forgotten Mission: Military Support to the Nation." *Joint Force Quarterly*.
- Indiana, Emergency Medical. State Code, art. 31.
- Indiana State Emergency Management Agency 1997. (Organization Information). [web page](accessed 13 October 1998); available from <http://www.state.in.us/sema/introduction.html>; Internet.
- Indiana State Emergency Management Agency, Operations Division 1995. *American Eagle Flight 4184 Air Crash After-Action Report*. Indianapolis: Indiana State Emergency Management Agency.
- Kansas, Emergency Preparedness for Disasters. Kansas State Acts. Chapter 48, art. 9.
- National Academy of Public Administration 1993. *Coping with Catastrophe, Building an Emergency Management System to Meet People's Needs in Natural and Manmade Disasters*. Washington, D.C.: National Academy of Public Administration.

- _____. 1997. *The Role of the National Guard in Emergency Preparedness and Response*. Washington, D.C.: National Academy of Public Administration.
- New York State Emergency Management Office 1998. *Incident Command System*. n.p.: New York State Emergency Management Office.
- North Dakota Division of Emergency Management 1993. *Emergency Operations Plan (Revised 1993)*. Bismarck: North Dakota Division of Emergency Management.
- State Emergency Management Agency/Division of Fire and Building Services/Public Safety Training Institute 1997. *1997 Annual Report*. Indiana State Emergency Management Agency. Indianapolis: State Emergency Management Agency/Division of Fire and Building Services/Public Safety Training Institute.
- Witt, James L. 1999. "Project Impact and Disaster Resistant Universities." *Disaster Recovery Journal*, vol. 12, issue 1. Washington, D.C.: White.

ANNOTATED BIBLIOGRAPHY

Beauchesne, Ann M. *A Governor's Guide to Emergency Management*. Washington, D.C.: National Governor's Association, 1998.

A particularly concise document with details as well as generalized statements to aid in the development of Emergency Management Policy at the state level. The information in the first several chapters was most applicable to this study. This document is a necessity for state and county level emergency managers.

California Institute for Federal Policy Research. (No title listed). [web page]; available from <http://www.calinst.org>; Internet, 1998.

This citation was the only from this source. Though the document was concise and informative, it lacked in background and reasoning for conclusions. Specific facts and dates provided excellent research material for the section of chapter 1 explaining the formation of emergency management policy.

Emergency Management Procedure Review Task Force. *Final Report*. Leavenworth, KS: Emergency Management Procedure Review Task Force, 1996.

This document was useful because it shed some light on aspects of the KDEM that were alluded to in conversations with members of the KDEM. However, much of the material within the document required a level of familiarity with state-level and county-level emergency management within Kansas.

Federal Emergency Management Agency. *About FEMA*. [web page]; available from <http://www.fema.gov/about/what.htm>; Internet, 1998.

The FEMA home page provides many links to non-technical data about the agency and its functions. This reference did not provide much in the form of detailed research material. Much of the information on the FEMA home page and links is geared toward the general public, not emergency managers.

Federal Emergency Management Agency. *FEMA Instructional Pamphlet 5000.2*. [web page]; available from <http://www.ci.malibu.ca.us>; Internet, 1986.

A thorough document providing common definitions to many familiar and unfamiliar terms alike. A necessary reference for complete understanding of emergency management terminology.

Friez, Douglas C. and Kathleen Donahue. *North Dakota After Action Report, Historical Perspective*. Bismarck: North Dakota Division of Emergency Management, 1997.

An excellent and thorough after action report. The document provided every detail of disaster events reviewed in this thesis. This after action report is an example of an effective method for documenting disaster events and provides excellent research material for other emergency management studies.

Garfield, K.R. *San Francisco Earthquake*. [web page]; available from <http://www.garfield.kr.ut.us>; Internet, 1997.

One of the few Internet sources providing details of the San Francisco earthquake with references to emergency management operations. An excellent source for researchers inquiring about the role of the DoD in emergency management operations.

Grange, MG David L. (USA) and Rodney L Johnson, LTC (USA). "Forgotten Mission: Military Support to the Nation." n.p.: *Joint Force Quarterly*, 1997.

One of the best sources for technical data concerning the emergency management process of the federal government and the role of federal agencies in that process. This article provides a basis of understanding of the emergency management process with specific focus on the role of the DoD.

Indiana, Emergency Medical. Indiana State Code (Emergency Medical), art. 31, 1993.

A difficult document to read and glean understanding of the roles and responsibilities of the Indiana State Emergency Management Agency. While this document did provide information concerning the Indiana State Emergency Management Agency, understanding how the agency applied the laws therein was difficult without the case study reference material.

Indiana State Emergency Management Agency. (Organization Information). [web page]; available from <http://www.state.in.us/sema/introduction.html>; Internet, 1997.

An excellent source for detailed as well as general information concerning emergency management in Indiana. From this site there are links to other areas associated with emergency management. An excellent source for state and county level emergency managers to obtain information for techniques proven during disaster events.

Indiana State Emergency Management Agency, Operations Division. *American Eagle Flight 4184 Air Crash After-Action Report*. Indianapolis: Indiana State Emergency Management Agency, 1995.

A thorough and detailed documentation of the air crash. The report provides information valuable to emergency managers at the local through federal levels. The report included many comments from agencies involved in the operation providing excellent lessons learned.

Kansas, Emergency Preparedness for Disasters. Kansas State Acts. Chapter 48, art. 9, 1993.

The document was written in a way that it was difficult to draw parallels between the Kansas State Acts and the KDEM SEOP. Much of the language within the Kansas State Acts is legal jargon contributing to this lack of understanding.

National Academy of Public Administration. *Coping with Catastrophe, Building an Emergency Management System to Meet People's Needs in Natural and Manmade Disasters*. Washington, D.C.: National Academy of Public Administration, 1993.

An exceptional study conducted by the National Academy of Public Administration. A very thorough study that provided insight into techniques for emergency management at all levels.

_____. *The Role of the National Guard in Emergency Preparedness and Response*. Washington, D.C.: National Academy of Public Administration, 1997.

This document provides insight into many more issues than just the role of the National Guard in emergency preparedness and response. This is an excellent starting point from which emergency managers can begin studies of the three types of state-level emergency management organizations. It also provides civilian and military personnel alike an view into the challenges the National Guard has with maintaining its federal role while also providing it's state with emergency management resources.

New York State Emergency Management Office. *Incident Command System*. n.p.: New York State Emergency Management Office, 1998.

A very good source for gaining a better understanding of the ICS. However, the document does not provide techniques for developing ICS procedures.

North Dakota Division of Emergency Management. *Emergency Operations Plan*. Bismarck: North Dakota Division of Emergency Management, 1993.

The best document available during completion of this thesis for detailing the functions and authorities of a state-level emergency management agency. Provided for a clear correlation between functions and actions in the case studies.

State Emergency Management Agency/Division of Fire and Building Services/Public Safety Training Institute. *1997 Annual Report*. Indianapolis: Indiana State Emergency Management Agency, 1997.

This publication provided an general overview of the emergency management system within Indiana. It included information about all facets of emergency management to include hazardous materials, building management and training. An excellent source for initiating a search into state-level emergency management.

Witt, James L. Project Impact and Disaster Resistant Universities. *Disaster Recovery Journal*, vol. 12, issue 1, 1999.

The *Disaster Recovery Journal* is perhaps the most current emergency management document produced. The journal highlights advances in technologies, techniques and lessons learned from emergency managers nation-wide. Mr. Witt's article provided a departure point from which to discuss areas where further research could occur. The article, however, does not provide much in the process of making communities more "disaster resistant."

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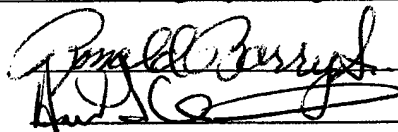
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